Development of Automated Purchase System for NIT Rourkela

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Certificate

This is to certify that the work in the thesis entitled *Development of Automated Purchase System for NIT Rourkela* by *Kumar Gaurav*, bearing Roll number 109CS0142, *Avin Goyal*, bearing Roll number 109CS0144, *Ashish Kumar Pradhan*, bearing Roll number 109CS0174 and *Nitesh Kumar Neeraj*, bearing Roll number 109CS0635 is a record of an original research work carried out by them under my supervision and guidance in partial fulfillment of the requirements for the award of the degree of *Bachelor of Technology* in *Computer Science and Engineering*. Neither this thesis nor any part of it has been submitted for any degree or academic award elsewhere.

D. P. Mohapatra

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Abstract

Procurement of Goods and services at NIT Rourkela is a thorough and long process and is currently done manually. It involves a large number of activities including fund allocation to sub-heads, enlistment of Goods and Services, registration of Suppliers etc. The purchase process itself can be done in four different ways - Direct Purchase, Advertised Tender Enquiry, Limited Tender Enquiry and Single Tender Enquiry. Also, the entire process requires the approval of a number of staffs at various stages. For this project, this entire process needs to be automated in the form of a web-based application. The application would not only make it easy for the staffs and faculties to carry out the purchase process by reducing their workload and lessening the time delays in the process, but also ensure complete transparency. The application would consist of seven different modules for Managing login, Managing Chart of Accounts (Account Categories, Heads, Sub-Heads, Funds, Goods/Services and Suppliers), Managing Direct Purchase, Managing Advertised Tender Enquiries, Managing Limited Tender Enquiries, Managing Single Tender Enquiries and Managing Purchase Requisitions.

***Keywords*:** Purchase, Account Category, Account Head, Account Sub-Head, Fund Allocation, Direct Purchase, Advertised Tender Enquiry, Limited Tender Enquiry, Single Tender Enquiry, Purchase Requisition.

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Chapter 1

Introduction

For the "Procurement of Goods and Services", NIT Rourkela follows a process that takes in account the guidelines issued by the Central Vigilance Commission as desired by the Ministry of Human Resource and Development, Government of India. The resulting Purchase Process is systematic and exhaustive. It is also very long and involves a number of authorities and staffs spanning across the entire Academics and all the Departments. The aim of our Project is to develop a web-based application that would be able to automate this entire process of purchase.

ASP.NET Framework was used for the Development of the web-application because of the following advantages:

1 ASP.NET is object-oriented.

2 Any .NET language can be used - we decided to use because of its similarity to C.

3 ASP.NET provides an extremely rich set of web-controls such as Gridview, Calendar etc. This makes it easier to build great user interface.

4 ASP.NET web-applications have full access to the power of .NET framework class library.

5 Most of the websites of our institute like 'eims' are built using this framework. Thus, using the same platform provides ease of maintenance.

1.1 Purpose

This document is developed as a part of the software that will manage all the purchase in National Institute of Technology, Rourkela. It explains the motivation behind this project. It will also help an unknown user familiarize with the purchase process. It enlists the definitions of the major concepts and terms involved. It also enlists the functional and non-functional requirements that must be implemented by the system. The outputs of the various phases of the development of the software such as Data Flow Diagrams, Data Dictionary, Pseudo code etc. are also present here. It also contains descriptions of GUI, screenshots and Tables & Views used in the database. These will help new users to acquaint themselves with the system and will also help in maintenance of the system.

1.2 Limitations of Existing System

As mentioned earlier, the process of purchase is long and a bit complicated. It involves a large number of activities from allocating funds to sub-heads at the beginning of every academic year, enlistment of Goods and Services, registration of Suppliers etc. Also, the entire process requires the approval of a number of staffs including HOD, PI, Assistant Registrar (IA), Dean, Director etc. at various stages.

Currently, this entire process is done manually. The records are stored manually, the forms are filled manually and documents must be sent from one department to another for approval. As such, the process is cumbersome, time consuming and involves a lot of paperwork.

The software developed as a part of this project will be able to automate this entire Purchase process. Our application would make it easy for the staffs and faculties to carry out the purchase process by reducing their workload. This is done by implementing a central database that will reduce the paperwork and minimize delays. Also, it will ensure complete transparency. Lastly, it will make Report Generation easier.

1.3 Objective

Before the development of this project started, the following goals were accepted as the objectives.

- **To automate the purchase process of NIT Rourkela through the development of a web application.**
- **To develop a user friendly interface for the web application -** All the pages of the system have been designed using the same basic layout. This gives the system consistency and allows the users to learn the features of the interface quickly as they can extend their knowledge about one page of the interface to other pages.
- **To manage chart of accounts -** Chart of accounts is the heart of the complete application. It consists of the management of account categories, account heads, account sub-heads, fund allocation, goods/services and suppliers.
- **To manage login -** Login is the entry gate for the application and manages the session variables associated with the user names.
- **To manage direct purchase -** This kind of purchase includes purchases of goods that do not require inviting quotations or bids on the basis of a certificate to be recorded by the HOD/HOC/PI/Registrar. Rather these can be done directly.

- **To manage single tender enquiry -** It is a process of purchasing Goods and Services. In this process a Good can only be bought from certain supplier only. There are specific reason of doing so, so only one item is bided by a single supplier only.

- **To manage limited tender enquiry -** This method adopted when estimated value of the goods to be procured is up to Rs.25 lakh (Rupees Twenty-five lakh). In such cases, copies of the bidding documents should be sent directly by speed post/registered post/courier/fax/e-mail to selected Registered Suppliers for the goods. Enquiries may also be sent to reputed suppliers of the goods, even if they are not registered with NIT.

- **To manage advertised tender enquiry -** For the purchase of Goods/Services of estimated value above Rs. 25 lakhs, Advertised Tender Enquiry is used.

- **To manage requisition -** For purchases above Rs.15000, Purchase Requisition should be initiated and approved by the HOD/HOC/PI/ Registrar and sent to the Internal Audit Section. The Internal Audit Section examines the proposal and vets it if found in order. The Deputy Registrar (Finance and Accounts) books the funds, if available and send the Requisition to the competent authority for approval/sanction.

Rest of the project report is organised as follows:

- **Chapter 2: Basic Concepts and Definitions -** This chapter describes various terms, concepts and the definitions used in the purchase process.

- **Chapter 3: Proposed Work -** This chapter describes the proposed work of the project in terms of the requirements and specifications including functional and non-functional requirements, DFDs and pseudocode.

- **Chapter 4: Implementation And Results -** This chapter describes the results of the implementation through well defined snapshots, tables and views(used in the development).

- **Chapter 5: Conclusion and Future Work -** This chapter describes the different modules that have been successfully completed. It also gives emphasis on the advantages of the developed system over the cons of the present system. Also the purchase system developed leaves some scope for the future work. This chapter also throws light in this area.

Chapter 2

Basic Concepts and Definitions

As it is associated with a very comprehensive process, the purchase system of NIT Rourkela involves a large number of staffs and departments. The user of such an exhaustive process needs to be conversant with various terms and concepts used in the same.

This section describes these terms and concepts that are being used in the process of automation of the system. These are:

(i) **Department** : It means department like Civil, Mechanical, Computer Science etc. at the National Institute of Technology, Rourkela. Departments are used while initiating enquiries and requisitions. An enquiry and its corresponding requisition must be associated with a department so that the purchase can be approved by the respective HODs. And same is the case with the initiation of Direct Purchase.

(ii) **Director** : Means the Director, National Institute of Technology, Rourkela. The director serves as the sanctioning authority for the approval of purchases with net expenditure more than Rs. 50,000.

(iii) **Goods** : It include all articles, commodities, materials, spares, instruments, machinery, equipment, industrial plant, books, software, licences etc. These are required to be added while carrying out any type of purchase.

(iv) **Services** : It includes all services rendered which are beneficial to the Institute but cannot be seen in material form. These are required to be added while carrying out any type of purchase.

(v) **HOD/HOC** : Means the Head of the Department/Centres of the N.I.T., Rourkela. HOD/HOC is one of the members in the hierarchy of the approving authorities.

(vi) **Institute/NIT** : Means National Institute of Technology, Rourkela.

(vii) **PI** : Means Principal Investigator in respect of Sponsored Research and Consultancy Projects. They approve purchases that are associated with projects.

(viii) **Registrar** : Means Registrar, National Institute of Technology, Rourkela.

(ix) **Project** : These are the endeavours associated with various departments. Each project has a PI who manages it. An enquiry can be initiated either under a department or a project.

(x) **Supplier/Firm** : A person/organisation that trades various goods and services mentioned above.

(xi) **Account Category** : Account Categories represent the different types of heads that can be created in our institute.
In our institute basic Account Categories are : Plan, Non- Plan, Salary, IRG, Endowment, SRICCE, Miscellaneous.

(xii) **Account Head** : Account Heads represent the major heads that are available in our institute for the process of Purchase. Each head has some minor heads that are allocated some funds in the beginning of every financial year. Purchase of Goods and Services must be performed through appropriate heads.

(xiii) **Account Sub Head** : Account Sub-Heads represent the minor heads that are available in our institute for the process of Purchase.

(xiv) **Fund Allocation** : Fund Allocation is an important part of the purchase process. Before any type of purchase can take place, funds must be allocated to Account Heads.

(xv) **Direct Purchase** : Purchase of goods up to the value of Rs.15,000/- (Rupees Fifteen thousand only) on each occasion may be made without inviting quotations or bids on the basis of a certificate to be recorded by the HOD/HOC/PI/Registrar.

(xvi) **Single Tender Enquiry** : For the purchase of Goods/Services from a Single Supplier, Single Tender Enquiry is used. Single Tender enquiry must be used only under the following circumstances, with prior approval of the Director:

- It is in the knowledge of the NIT that only a particular firm is the manufacturer of the required goods.
- In a case of emergency, the required goods are necessarily to be purchased from a particular source for which the reasons for such decision and why the requirement could not be foreseen should be recorded in writing and prior approval of the Director obtained.
- For standardization of machinery or spare parts to be compatible to the existing sets of equipment (on the advice of a competent technical expert and approved by the Director), the required item is to be purchased only from a selected firm.

(xvii) **Advertised Tender Enquiry** : For the purchase of Goods/Services of estimated value above Rs. 25 lakhs, Advertised Tender Enquiry is used. Advertisement in such cases, should be given in Indian Trade Journal(ITJ) published by Director General of Commercial Intelligence and Statistics, Kolkata and at least in one national daily having wide circulation.

(xviii) **Limited Tender Enquiry** : This method adopted when estimated value of the goods to be procured is up to Rs.25 lakh (Rupees Twenty-five lakh). In such cases, copies of the bidding documents should be sent directly by speed post/registered post/courier/fax/e-mail to selected Registered Suppliers for the goods. Enquiries may also be sent to reputed suppliers of the goods, even if they are not registered with NIT.

(xix) **Purchase Requisition** : It is a document created by external or internal organization like NIT, Rourkela to alert the purchasing department of items it needs to order, their quantity, and the time frame that will be given in the future.

Chapter 3

Proposed Work

The objective of this chapter is to describe the proposed work of the project in terms of the requirements and specifications including functional and non-functional requirements, DFDs and pseudocode.

3.1 Functional Requirements

This section describes various core functionalities used by the user. These include:

R.1 **Manage Login**:

R.1.1 **Validate Login Details**:

Input: Usercode and Password.

Process: Checked against the entry in the database.

Output: Confirmation or Error message.

R.2 **Manage Chart Of Accounts:**

R.2.1 **Manage Account Category:**

R.2.1.1 **Create Account Category:**

Input: Account Category Create Data
(Account Category Code, Account Category Name and
Account Category Description)

Process: Details added to the database.

Output: System generated Account Category Code and Confirmation message.

R.2.1.2 **Search Account Category:**

Input: Account Category Search Data (Account Category Code or Account Category Name or Account Category Description).

Process: Details checked against the database.

Output: Search Result.

R.2.1.3 **Update Account Category:**

Input:Account Category Search Data (Account Category Name or Account Category Description).

Process: Details updated.

Output: Update Confirmation.

R.2.2 **Manage Account Head:**

R.2.2.1 **Create Account Head:**

Input: Account Head Create Data (Account Category Name, Account Head Name and Account Head Description).

Process: Details added to the database.

Output: System generated Account Head Code and Confirmation message.

R.2.2.2 **Search Account Head:**

Input: Account Head Search Data (Account Head Code or Account Head Name or Account Category Description).

Process: Details checked against the database.

Output: Search Result.

R.2.2.3 **Update Account Head:**

Input: Account Head Search Data

(Account Head Name or Account Head Description).

Process: Details updated.

Output: Update Confirmation

R.2.3 **Manage Account Sub-Head:**

R.2.3.1 **Create Account Sub-Head:**

Input: Account Sub-Head Create Data

(Account Head Name, Account Sub-Head Name,

Account Sub-Head Description, Responsible Authority and

Approving Authority).

Process: Details added to the database.

Output: System generated Account Sub-Head Code and

Confirmation message.

R.2.3.2 **Search Account Sub-Head:**

Input: Account Sub-Head Search Data

(Account Sub-Head Code or Account Sub-Head Name

or Account Sub-Head Description).

Process: Details checked against the database.

Output: Search Result.

R.2.3.3 **Update Account Sub-Head:**

Input: Account Sub-Head Update Data

(Account Head Name or Account Sub-Head Name,

Account Sub-Head Description, Responsible Authority and

Approving Authority).

Process: Details updated.

Output: Update Confirmation.

R.2.4 **Manage Fund Allocation:**

R.2.4.1 **Allocate Funds:**

Input: Allocate Funds Data.

(Year, Account Head, Account Sub-head, Allocated Amount).

Process: Details added to the database.

Output: Allocate Fund confirmation.

R.2.4.2 **Search Allocation:**

Input: Search Funds Data.

(Year, Account Head, Account Sub-head).

Process: Details checked against the database.

Output: Search Funds Results.

(Year, Account Head, Account Sub-head, Allocated Amount, Spent Amount, Committed Amount, Left Amount).

R.2.4.3 **Update Allocation:**

Input: Update Allocation Data

(Fund Number, New Allocation).

Process: Details updated.

Output: Update Allocation Confirmation.

R.2.4.4 **Divert Funds:**

Input: Divert Funds Data.

(Year, From Account Head, From Account Sub-head, To Account Head, To Account Sub-head, Diverted Amount).

Process: Funds diverted in the database.

Output: Divert Funds confirmation.

R.2.4.5 **View Fund Details:**

Input: Fund Number.

Process: Details fetched from the database.

Output: Fund Details.

R.2.4.6 **Print Fund Details:**

Input: Fund Number

Process: Printable copy prepared.

Output: Fund Doc.

R.2.5 **Goods and Service:**

R.2.5.1 **Add New Goods and Service:**

R.2.5.1.1 **Add Primary Goods and Service:**

Input: Primary Goods and Service Data

(Item Name, Item Type, Measurement Unit, Excise Duty)

Process: Details added to the database.

Output: System generated Primary Goods and Service Code and Confirmation message.

R.2.5.1.2 **Add Secondary Goods and Service:**

Input: Secondary Goods and Service Data

(Item Name, Item Type, Measurement Unit, Excise Duty)

Process: Details added to the database.

Output: System generated Secondary Goods and Service Code and Confirmation message.

R.2.5.1.3 **Add to Primary from Secondary Goods and Service:**

Input: Selected row of Secondary Goods and Service table.

(Item Name, Item Type, Measurement Unit, Excise Duty)

Process: Row deleted from Secondary Goods and Service table.

Output: Successfully inserted to Primary Goods and Service with Confirmation message.

R.2.5.2 **Search Goods and Service:**

Input: Goods and Service Search Data.

(Item Name, Item Type, Measurement Unit, Excise Duty)

Process: Details checked against the database.

Output: Search Result

R.2.5.3 **Update Goods and Service:**

Input: Goods and Service Search Data.

(Item Name, Item Type, Measurement Unit, Excise Duty)

Process: Details updated.

Output: Update Confirmation.

R.2.6 **Manage Supplier:**

R.2.6.1 **Add Supplier:**

Input: Supplier Add Data

(Supplier Name, Supplier Description, Address,

Contact Person, Designation, Phone Number, Fax Number, Email,

Pan Number, Tin Number, Maximum Order Size).

Process: Details added to the database.

Output: System generated Supplier Code and

Confirmation message.

R.2.6.2 **Search Supplier:**

Input: Supplier Search Data

(Supplier Code or Supplier Name or Supplier

Description or Address or Contact Person).

Process: Details checked against the database.

Output: Search Result.

R.2.6.3 **Update Supplier:**

Input: Supplier Update Data

(Supplier Name, Supplier Description, Address,

Contact Person, Designation, Phone Number, Fax Number, Email,

Pan Number, Tin Number, Maximum Order Size).

Process: Details updated.

Output: Update Confirmation.

R.2.7 **Manage Supplier Goods/Service Mapping:**

R.2.7.1 **Add New Supplier Item:**

Input: Supplier Item Data

(Goods/Services Supplier will Provide).

Process: Details added to the database.

Output: Confirmation message.

R.2.7.2 **Search Supplier Item:**

Input: Supplier Item Search Data
(Supplier Code or Supplier Name or Supplier
Description or Address or Contact Person or
Supplier Providing Goods/Services).

Process: Details checked against the database.

Output: Search Result.

R.2.7.3 **Update Supplier Item:**

Input: Update Supplier Item Data
(Supplier will provide Goods/Services Data).

Process: Details updated.

Output: Update Confirmation.

R.3 **Manage Direct Purchase:**

R.3.1 **Initiate Direct Purchase:**

Input: Account Sub-head, Purchase Mode and Reason for the given mode of purchase.

Process: Direct Purchase initiation.

Output: Initiation Confirmation.

R.3.2 **Direct Purchase Item Selection:**

Input: Direct Purchase Number, Goods/Services, Quantity and Unit Price.

Process: Item addition to the selected direct purchase.

Output: Items Addition Confirmation.

R.3.3 **Direct Purchase Supplier Selection:**

Input: Direct Purchase Number, Goods/Services, Supplier.

Process: Supplier addition to the selected item of the direct purchase.

Output: Supplier Addition Confirmation.

R.3.4 **Fill Bill Details:**

Input: Direct Purchase Number, Goods/Services, Supplier, Bill Number, Bill Date.

Process: Bill Details addition to the selected item of the direct purchase.

Output: Bill Details Addition Confirmation.

R.3.5 **Approve Direct Purchase:**

Input: Direct Purchase Number, Approve Command.

Process: Selected direct purchase approved.

Output: Approval Confirmation.

It is of four types:

R.3.5.1 **Approve Direct Purchase BY HOD.**

R.3.5.2 **Approve Direct Purchase BY Finance Officer.**

R.3.5.3 **Approve Direct Purchase BY Internal Audit.**

R.3.5.4 **Approve Direct Purchase BY Registrar.**

R.4 **Manage Advertised Enquiry:**

R.4.1 **Initiate Advertised Enquiry**

R.4.1.1 **Add New Advertised Enquiry**

Input: Advertised Enquiry Add Data.

(DepartmentProjectIndicator, DepartmentProject, Quotation Format, Quotation Validity, Min Warranty, Bid Security, Performance Security, Pre-Bid Conference Date, Last Date of Quotation Receipt, Quotation Opening Date, Techno-Commercial Bid Opening Date, Financial Bid Opening Date)

Process: New Advertised Enquiry added to database.

Output: Advertised Enquiry Code.

R.4.1.2 **Search Advertised Enquiry**

Input: Advertised Enquiry Search Data.

(Enquiry Code, Enquiry Status, DepartmentProjectIndicator, DepartmentProject, Quotation Format, Person In Charge, Date Created)

Process: Details checked against the database.

Output: Advertised Enquiry Search Result.

(Enquiry Number, Enquiry Code, DepartmentProject, Enquiry Status, Quotation Format, Person In Charge, Date Created).

R.4.3 **Add Suppliers:**

Input: Advertised Enquiry Supplier Add Data.

(Enquiry Number, GoodsService, Supplier)

Process: Supplier addition to the selected GoodsService of the Advertised Enquiry.

Output: Advertised Enquiry Supplier Add Confirmation.

R.4.4 **Technical Evaluation:**

Input: Advertised Enquiry Tech Eval Data.

(Enquiry Number, GoodsService, Supplier, Technical Marks)

Process: Technical marks for each GoodsService-Supplier pair stored in database.

Output: Advertised Enquiry Tech Eval Confirmation.

R.4.5 **Financial Evaluation:**

Input: Advertised Enquiry Financial Eval Data.

(Enquiry Number, GoodsService, Supplier, Response Date, Net Price, Entry Tax, Excise Duty, VAT/CST, Delivery Charges, Other Charges, Warranty, Payment Terms).

Process: Different Types costs, Warranty and Payment Terms for each GoodsService-Supplier pair stored in database.

Output: Advertised Enquiry Financial Eval Confirmation.

R.4.6 **Advertised Enquiry Approval:**

Input: Advertised Enquiry Approval Data.

Process: Advertised Enquiry Approved.

Output: Advertised Enquiry Approval Confirmation.

It is of two types:

R.4.6.1 **Advertised Enquiry HOD Approval**

R.4.6.2 **Advertised Enquiry Chairman Approval**

R.4.7 **Generate and Print Advertised Docs:**

Input: Enquiry Number.

Process: Advertised Docs Generation.

Output: Advertised Docs.

It is of two types:

R.4.7.1 **Generate Tender Letter**

R.4.7.2 **Print Tender Letter**

R.4.7.3 **Generate Comparative Study**

R.4.7.4 **Print Comparative Study**

R.5 **Manage Limited Tender Enquiry:**

R.5.1 **Initiate Limited Enquiry:**

R.5.1.1 **Add New Limited Enquiry (Above One Lakh)**

Input: Limited Enquiry Add Data (Dept/Proj Indicator, Dept/Proj Name, Quotation Format, Quotation Validity (days,), Min Warranty(Years), Bid Security, Performance Security, Pre bid Conference Date, Last Date of Quotation Receipt, Quotation Opening Date)

Process: New Limited Enquiry added to database.

Output: System generated Limited Tender(Above One Lakh) Enquiry Code.

R.5.1.2 **Add New Limited Enquiry (Below One Lakh)**

Input: Limited Enquiry Add Data (Dept/Proj Indicator, Dept/Proj Name, Date of Tender Close, Date of Tender Open)

Process: New Limited Enquiry added to database.

Output: System generated Limited Tender (Below One Lakh) Enquiry Code.

R.5.1.3 **Search Limited Enquiry (Above One Lakh)**

Input: Limited Enquiry Search Data.

(Enquiry Code, Enquiry Status, Department Project Indicator, Department Project, Quotation Format, Person In Charge, Date Created)

Process: Details checked against the database.

Output: Limited Enquiry Search Result.

R.5.1.4 **Search Limited Enquiry (Below One Lakh)**

Input: Limited Enquiry Search Data. (Enquiry Code, Enquiry Status, Department Project Indicator, Department Project, Date of Tender Submit, Date of Tender Close, Person In Charge, Date Created)

Process: Details checked against the database.

Output: Limited Enquiry Search Result.

R.5.2 **Add Goods and Services:**

Input: Limited Enquiry Item Add Data.

(Enquiry Number, Goods Service, Quantity, Technical Details)

Process: Item addition to the selected Limited Enquiry.

Output: Limited Enquiry Item Add Confirmation.

R.5.3 **Add Suppliers:**

Input: Limited Enquiry Supplier Add Data.

(Enquiry Number, GoodsService, Supplier)

Process: Supplier addition to the selected GoodsService of the Limited Enquiry.

Output: Limited Enquiry Supplier Add Confirmation.

R.5.4 **Technical Evaluation:**

Input: Limited Enquiry Tech Eval Data.

(Enquiry Number, GoodsService, Supplier, Technical Marks)

Process: Technical marks for each GoodsService-Supplier pair stored in database.

Output: Limited Enquiry Tech Eval Confirmation.

R.5.5 **Financial Evaluation:**

Input: Limited Enquiry Financial Eval Data.

(Enquiry Number, GoodsService, Supplier, Response Date, Net Price, Entry Tax, Excise Duty, VAT/CST, Delivery Charges, Other Charges, Warranty, Payment Terms).

Process: Different Types costs, Warranty and Payment Terms for each GoodsService-Supplier pair stored in database.

Output: Limited Enquiry Financial Eval Confirmation.

R.5.6 **Limited Enquiry Approval:**

Input: Limited Enquiry Approval Data.

Process: Limited Enquiry Approved.

Output: Limited Enquiry Approval Confirmation.

It is of two types:

R.5.6.1 **Limited Enquiry HOD Approval**

R.5.6.2 **Limited Enquiry Chairman Approval**

R.5.7 **Generate and Print Limited Docs:**

Input: Enquiry Number.

Process: Limited Docs Generation.

Output: Limited Docs.

It is of two types:

R.5.7.1 **Generate Tender Letter**

R.5.7.2 **Print Tender Letter**

R.5.7.3 **Generate Comparative Study**

R.5.7.4 **Print Comparative Study**

R.6 **Manage Single Tender Enquiry:**

R.6.1 **Initiate Single Tender Enquiry:**

R.6.1.1 **Add New Single Tender Enquiry:**

Input: Single Tender Enquiry Add Data
(DepartmentProjectIndicator, DepartmentProject,
Approximate Cost, Reasons).
Process: Details added to the database.
Output: Single Tender Enquiry Code.

R.6.1.2 **Search Single Tender Enquiry:**

Input: Single Tender Enquiry Search Data
(Enquiry Code or Enquiry Status or
DepartmentProjectIndicator or DepartmentProject or Person In
Charge or Date Created).
Process: Details checked against the database.
Output: Single Tender Enquiry Search Result
(Enquiry Number, Enquiry Code, DepartmentProject,
Enquiry Status, Person In Charge, Date Created,
Approximate Cost).

R.6.2 **Add Good:**

Input: Single Tender Enquiry Item Add Data
(Enquiry Number, Goods/Service, Quantity
Process: Item addition to the selected Single Tender Enquiry.
Output: Single Tender Enquiry Item Add Confirmation.

R.6.3 **Add Suppliers:**

Input: Single Tender Enquiry Supplier Add Data
(Enquiry Number, Goods/Service, Supplier)
Process: Supplier addition to the selected Goods/Service of the
Single Tender Enquiry.
Output: Single Tender Enquiry Supplier Add Confirmation.

R.6.4 **Single Tender Enquiry Approval:**

Input: Single Tender Enquiry Approval Data.
Process: Single Tender Enquiry Approved.

Output: Single Tender Enquiry Approval Confirmation.

It is of two types:

R.6.4.1 **Single Tender Enquiry Asst. Registrar Approval**

R.6.4.2 **Single Tender Enquiry Director Approval**

R.6.5 **Generate and Print Advertised Docs:**

Input: Enquiry Number.

Process: Single Tender Docs Generation

Output: Single Tender Docs

It is of two types:

R.6.5.1 **Generate Tender Letter**

R.6.5.2 **Print Tender Letter** R.7 **Manage Requisition:**

R.7.1 **Initiate Requisition:**

R.7.1.1 **Add New Requisition:**

Input: Requisition Add Data.

(Enquiry Code, Account Head, Account Sub-Head, Routine purchase procedure followed, Justification)

Process: New Requisition added to database.

Output: Requisition Code.

R.7.1.2 **Search Requisition**

Input: Requisition Search Data.

(Requisition Code, Requisition Status, DepartmentProjectIndicator, DepartmentProject, Enquiry Code, Person In Charge, Enquiry Type, Requisition Raised Date)

Process: Details checked against the database.

Output: Requisition Search Result.

(Requisition Number, Requisition Code, Enquiry Number, Enquiry Code, Account Head, Account Sub-Head, Requisition Status, Person In Charge)

R.7.2 **View Details of Requisition:**

Input: Requisition Number.

Process: Fetch details of Requisition from database.

Output: Requisition Details.

R.7.3 **HOD-PI Approval:**

Input: Requisition HOD-PI Approval Data.

Process: Approve Requisition from HOD/PI.

Output: Requisition HOD-PI Approval Confirmation.

R.7.4 **Internal Audit Approval:**

Input: Requisition Internal Audit Approval Data.

(VettedNon-vetted, Routine purchase procedure followed, Special purchase procedure followed, Other Observations

Recommended-Not recommended, Not recommended Reasons, Audit Assistant Approval, Assistant Registrar Audit Approval).

Process: Requisition Approved By Internal Audit.

Output: Requisition Internal Audit Approval Confirmation.

R.7.5 **Financial Approval:**

Input: Requisition Finance Approval Data.

Process: Requisition Approved By Finance Officer.

Output: Requisition Finance Approval Confirmation.

R.7.6 **Financial Approval:**

Input: Requisition Finance Approval Data.

Process: Requisition Approved By Finance Officer.

Output: Requisition Finance Approval Confirmation.

R.7.7 **Generate and Print Requisition:**

Input: Requisition Number.

Process: Requisition Docs Generation.

Output: Requisition Docs.

It is of two types:

R.7.7.1 **Generate Requisition Letter**

R.7.7.2 **Print Requisition**

3.2 Non-Functional Requirements

1. **Hardware Requirements** :

   - Servers Required: 2
   - Database Server: MS SQL Server 2008
   - Application Server: MS .net framework

2. **People** :

   (i) Department Level:

   (a) Lab in charge/PI

   (b) Chairman Purchase Committee

   (c) PID Direct Purchase

   (d) Departmental Office

   (e) HOD/HOC/PI

   (ii) Institute Level:

   (a) P and W Staff

   (b) P and W AR Staff

   (c) A/C Staff

   (d) A/C/ AR/DR

   (e) IA Staff

   (f) IA AR/DR

   (g) Registrar

   (h) Dean/Deputy Director

   (i) Director

   (iii) Software Admin

3.3 Data Flow Diagrams

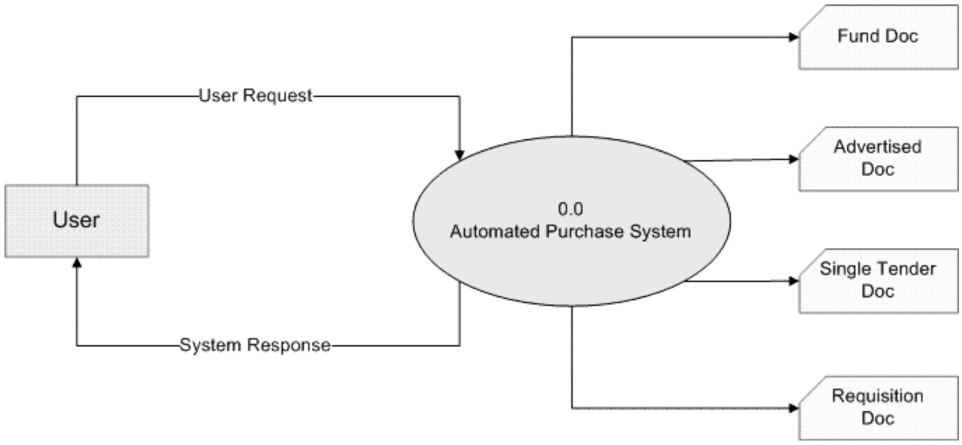


Figure 3.1: Context Diagram

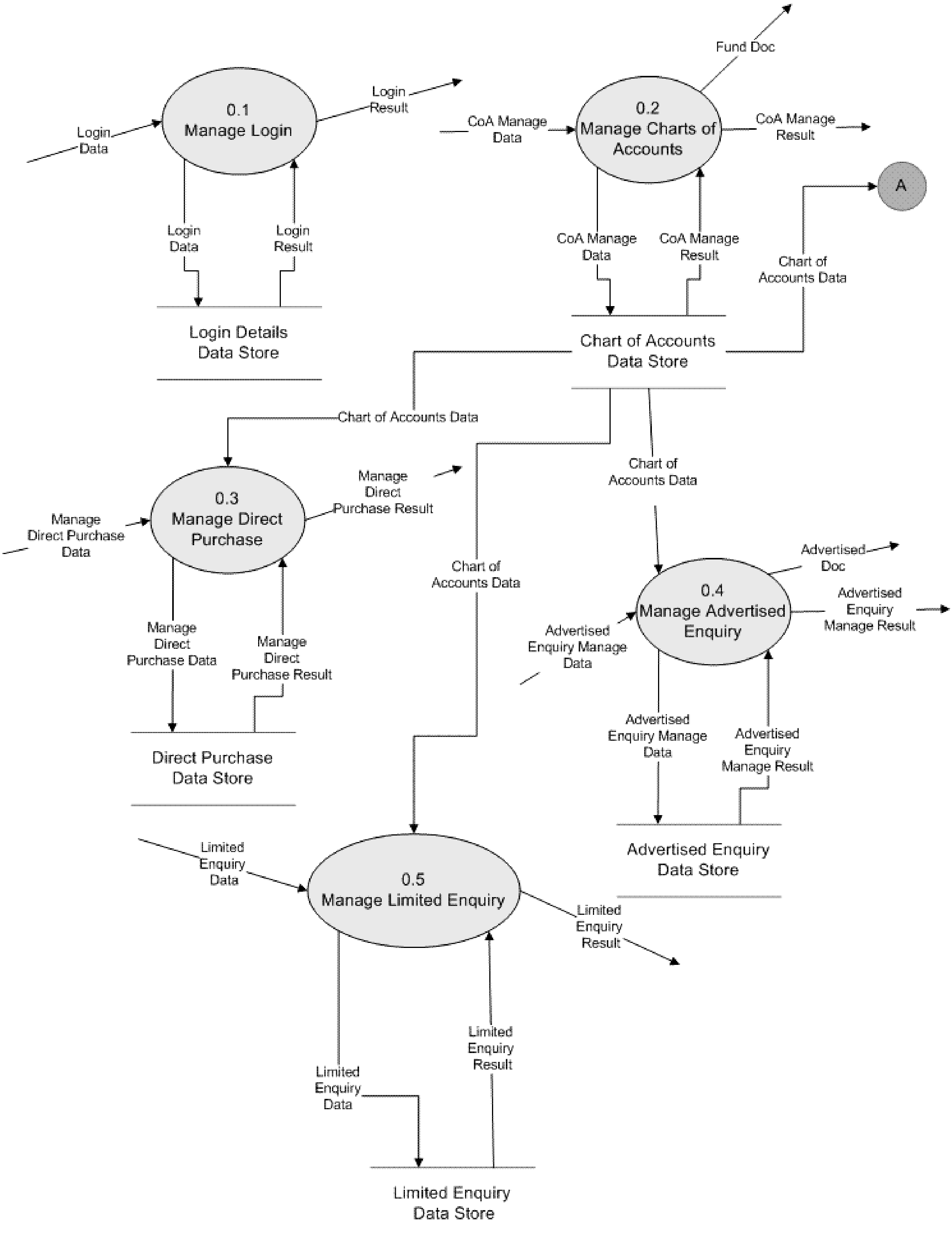


Figure 3.2: Level 1 DFD (Part 1)

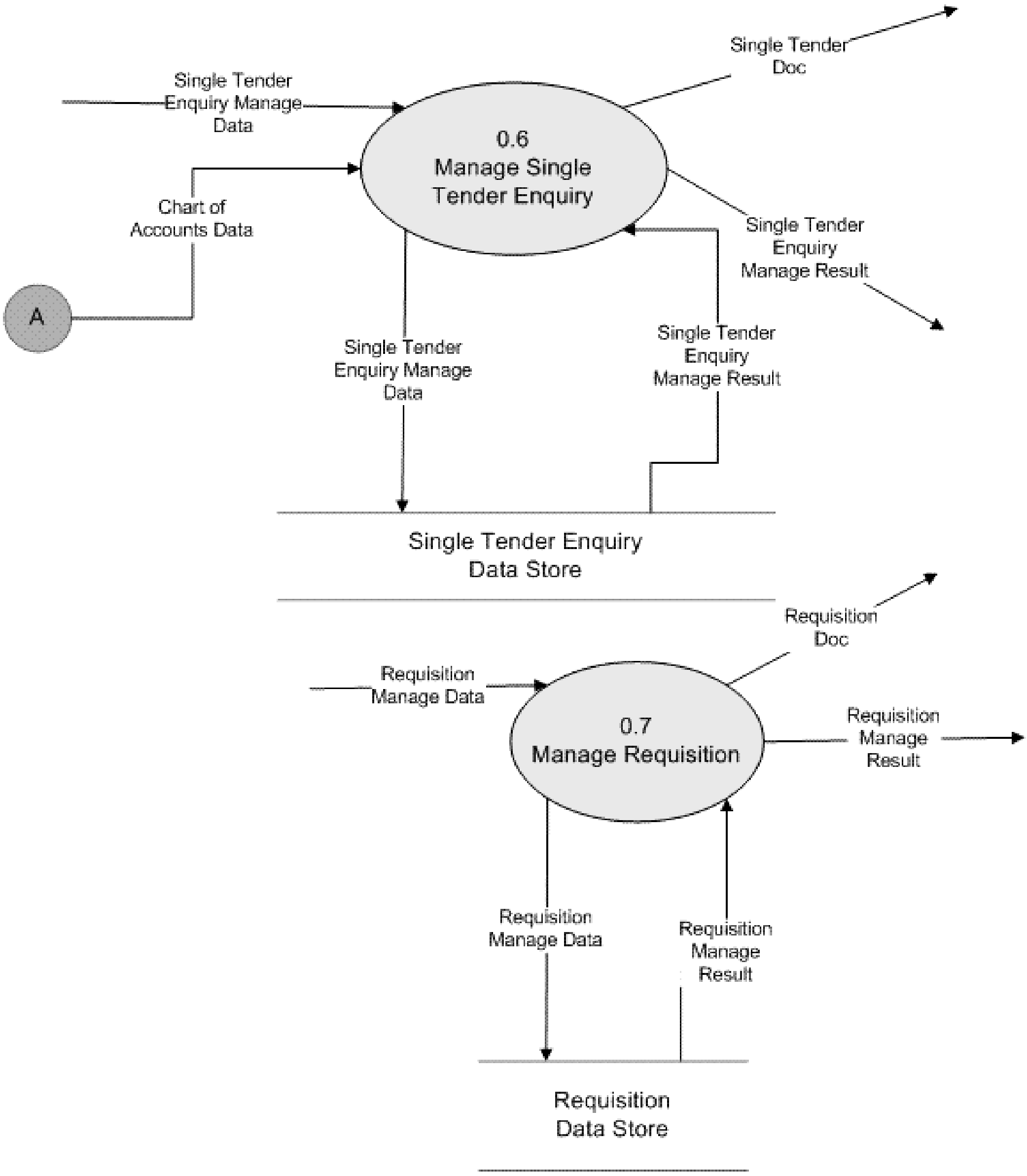


Figure 3.3: Level 1 DFD (Part 2)

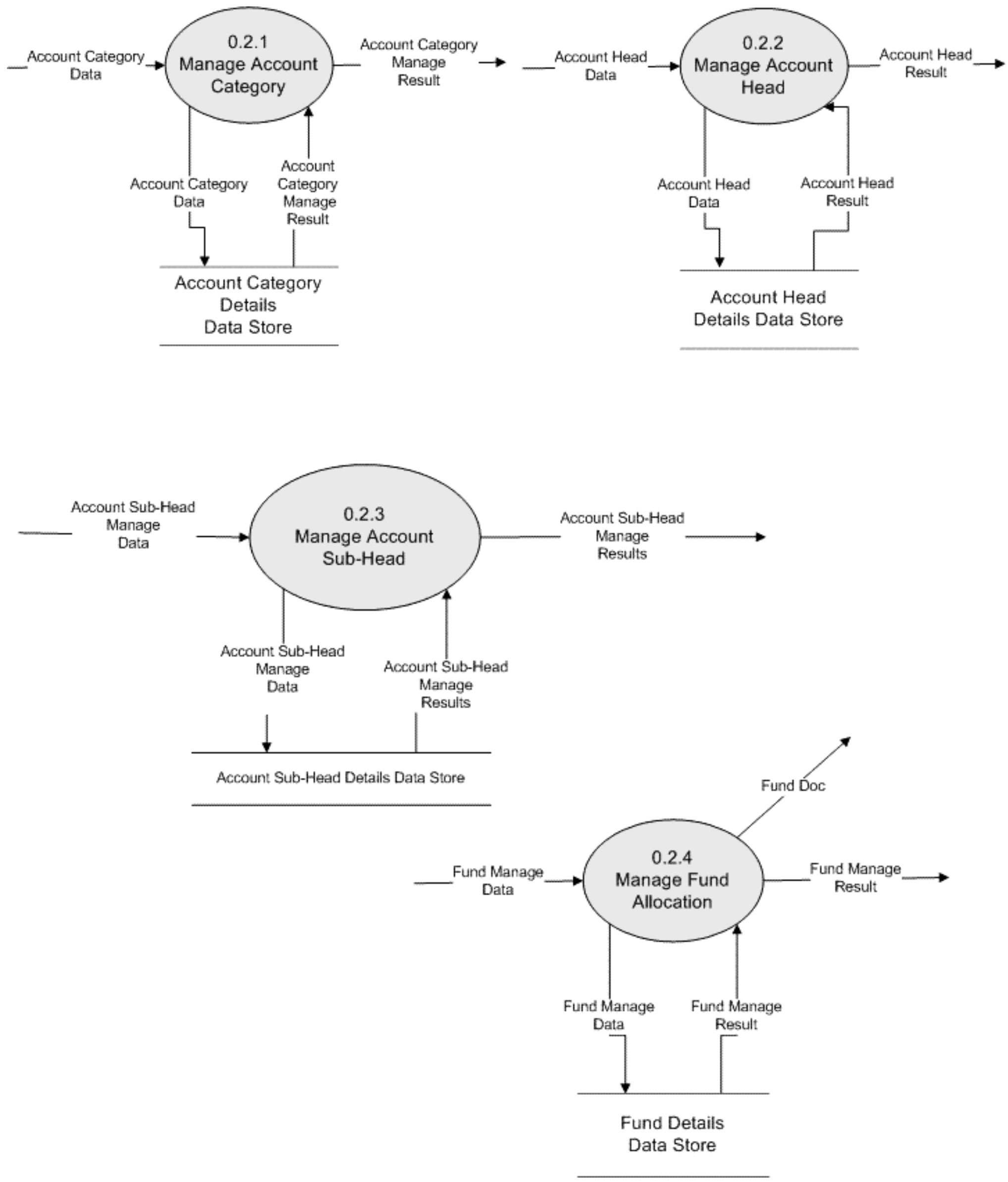


Figure 3.4: Level 2 Chart Of Accounts (Part 1)

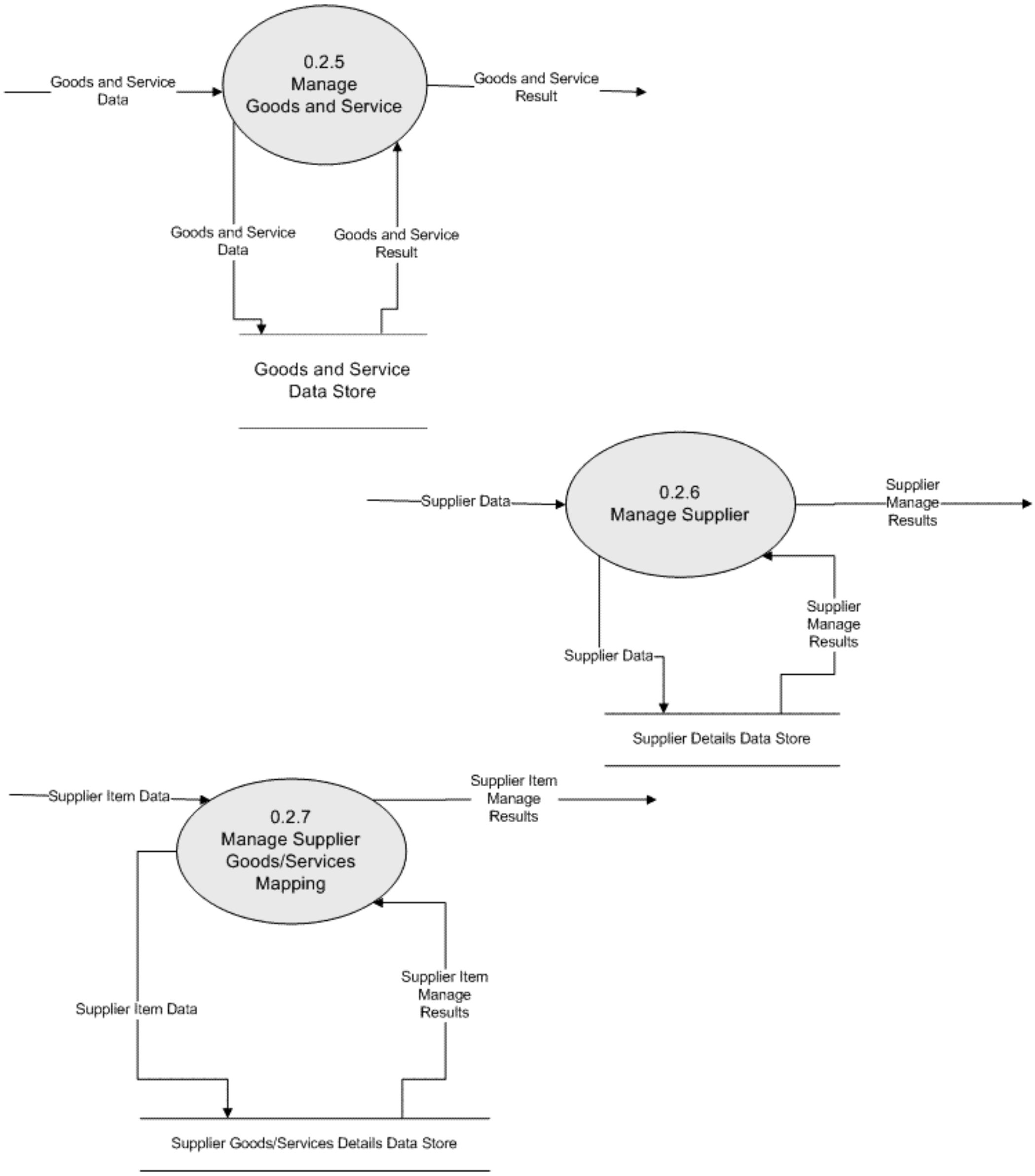


Figure 3.5: Level 2 Chart Of Accounts (Part 2)

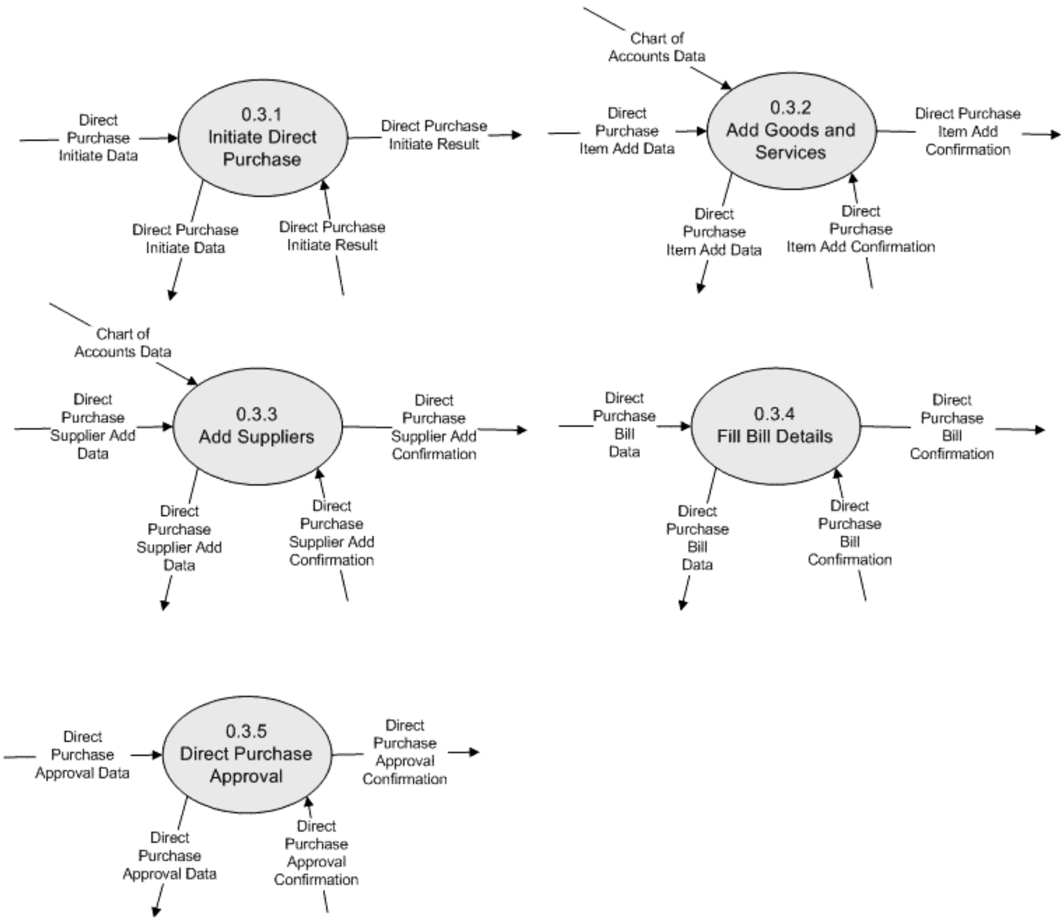


Figure 3.6: Level 2 Direct Purchase

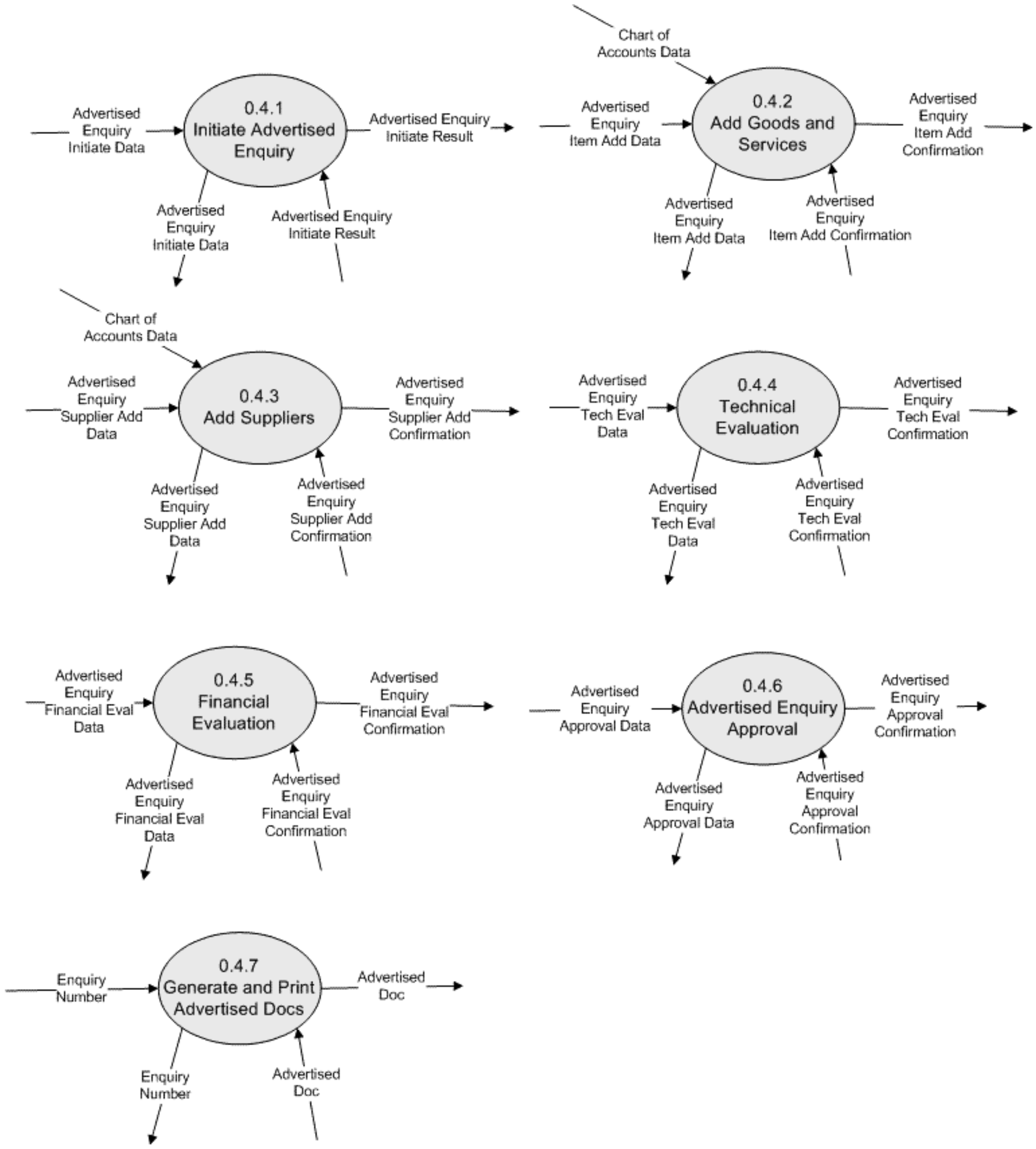


Figure 3.7: Level 2 Advertised Tender Enquiry

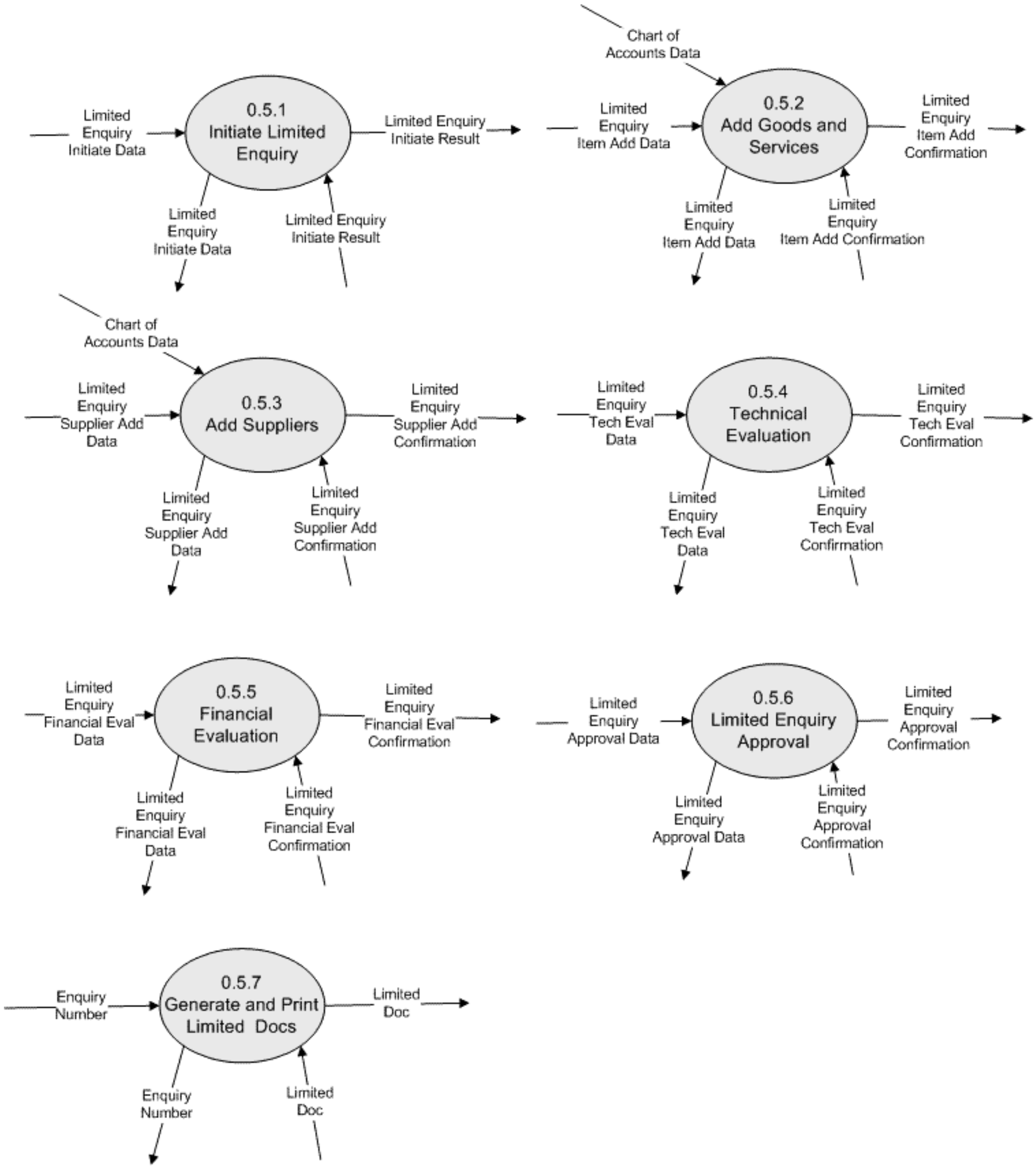


Figure 3.8: Level 2 Limited Tender Enquiry

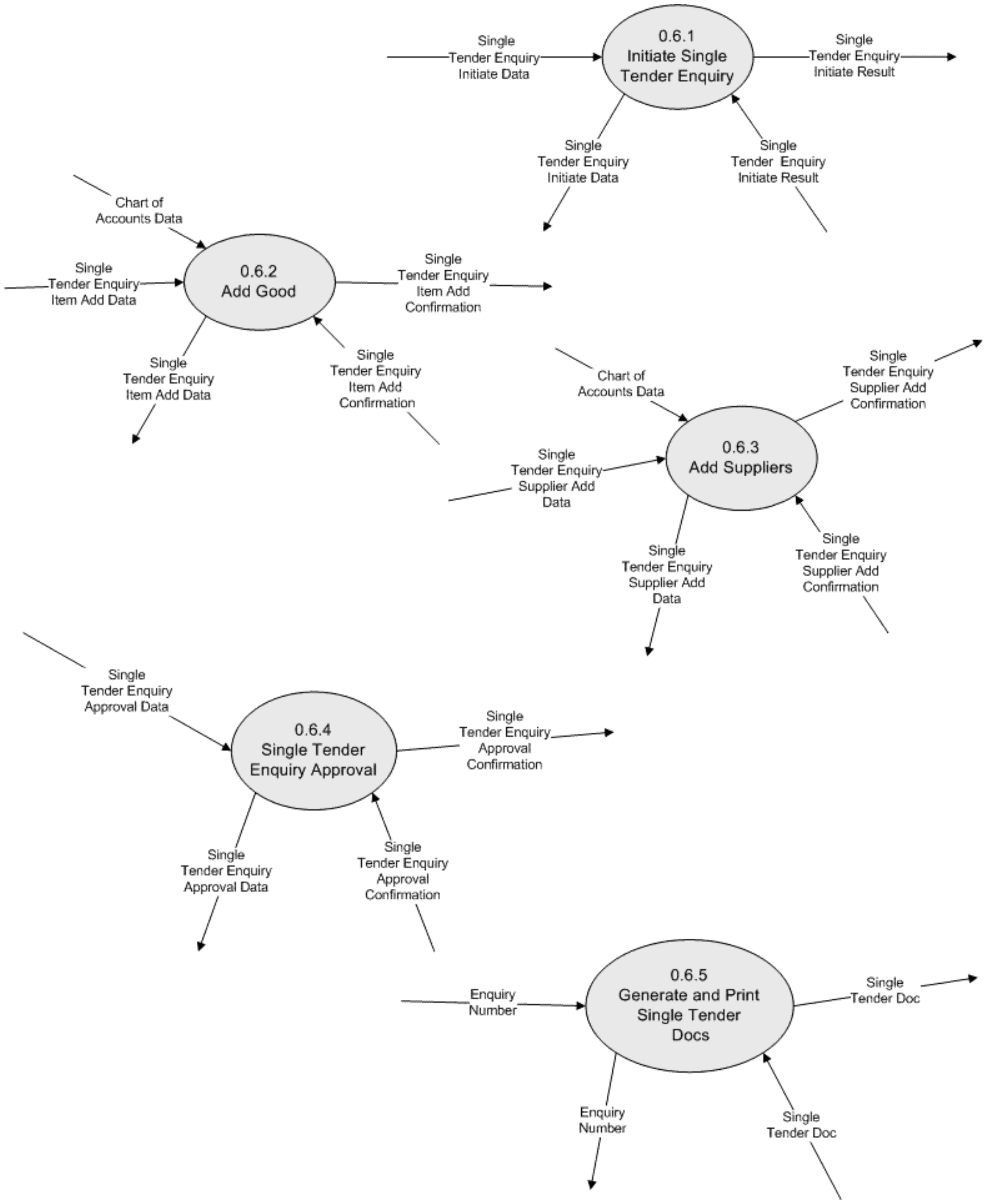


Figure 3.9: Level 2 Single Tender Enquiry

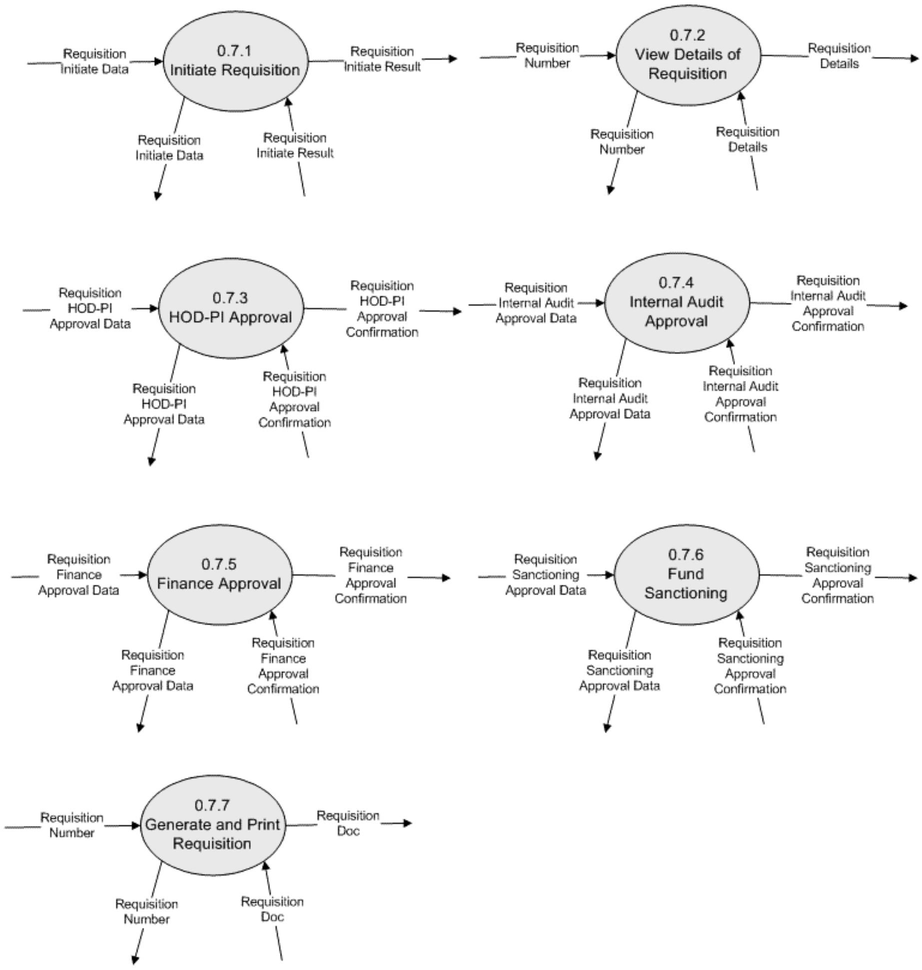


Figure 3.10: Level 2 Requisition

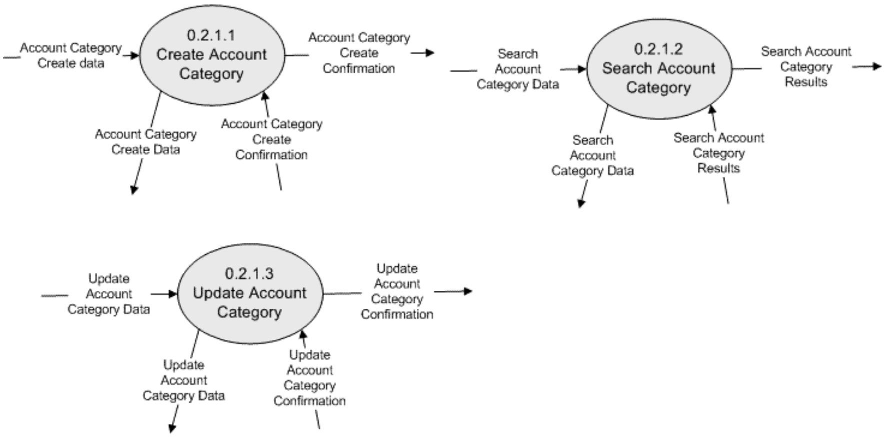


Figure 3.11: Level 3 Manage Account Category

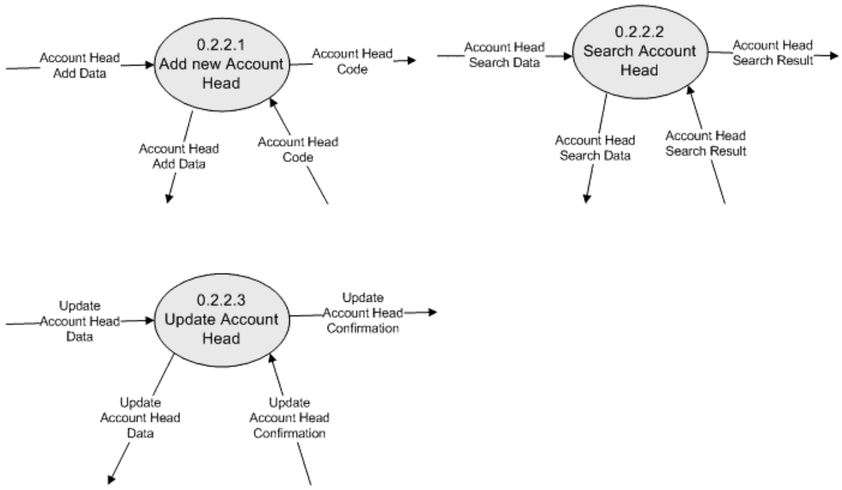


Figure 3.12: Level 3 Manage Account Head

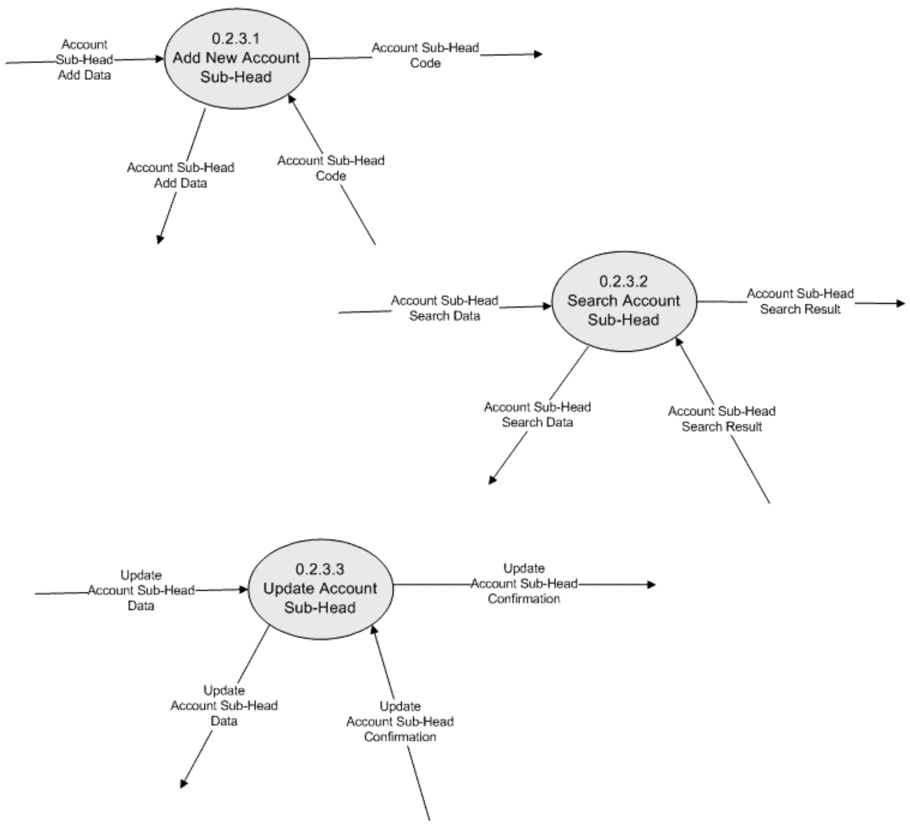


Figure 3.13: Level 3 Manage Account Sub Head

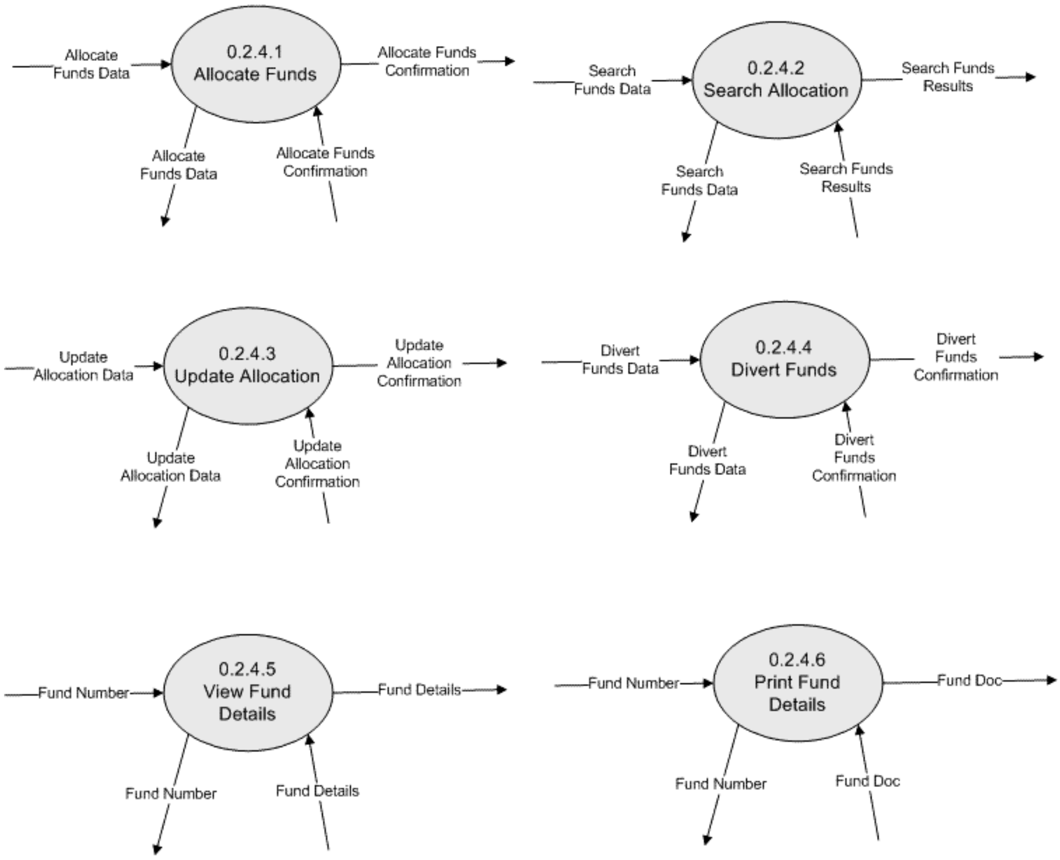


Figure 3.14: Level 3 Manage Fund Allocation

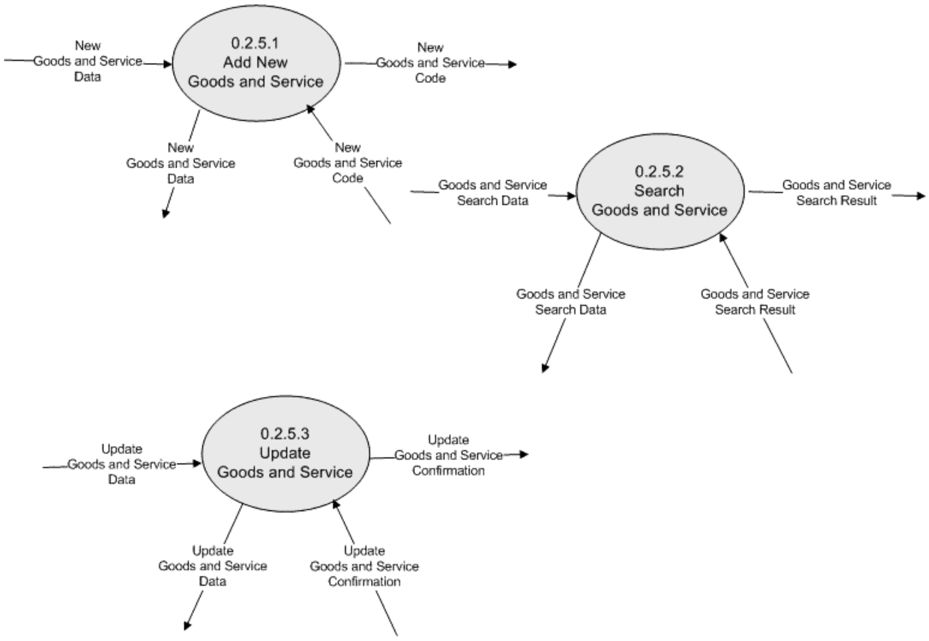


Figure 3.15: Level 3 Manage Goods And Services

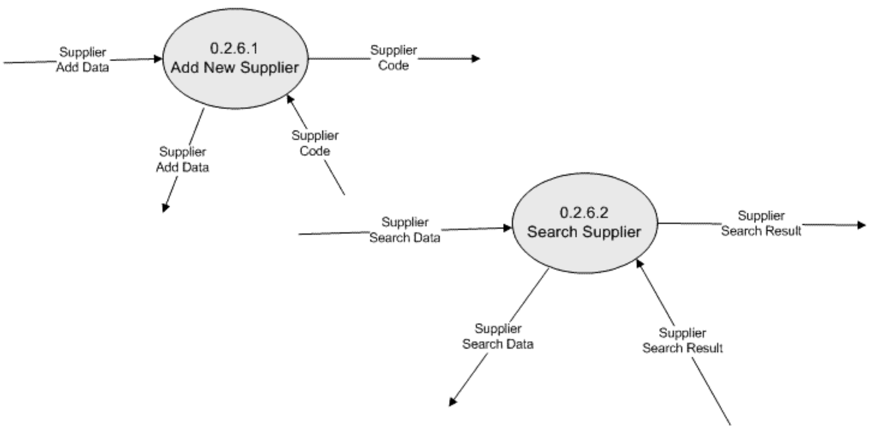


Figure 3.16: Level 3 Manage Supplier (Part 1)

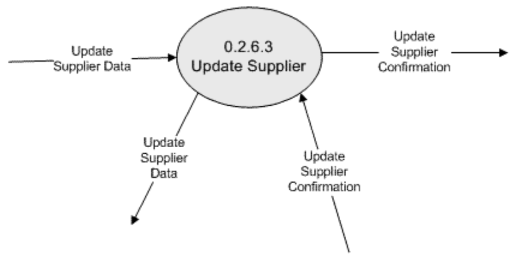


Figure 3.17: Level 3 Manage Supplier (Part 2)

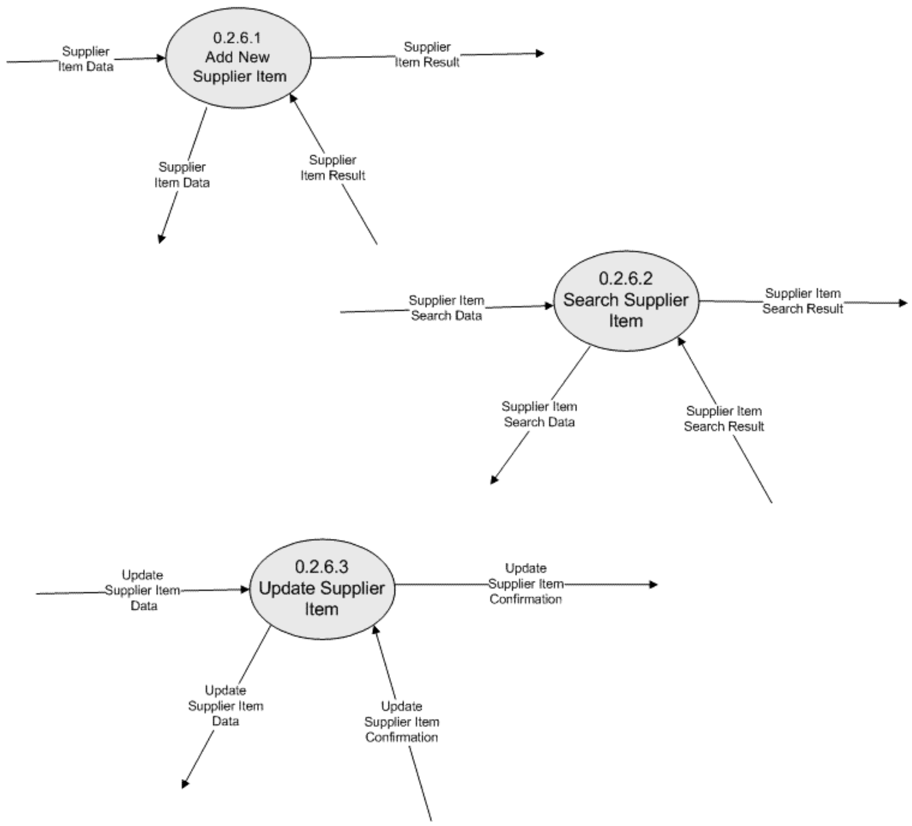


Figure 3.18: Level 3 Manage Supplier Item Mapping

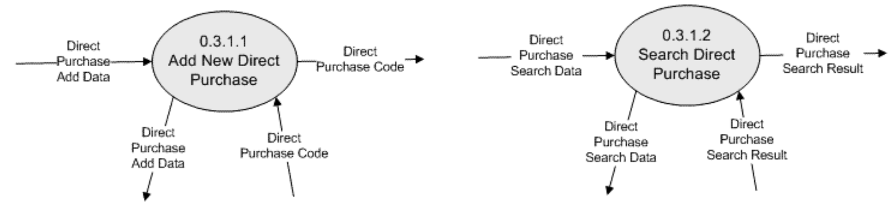


Figure 3.19: Level 3 Initiate Direct Purchase

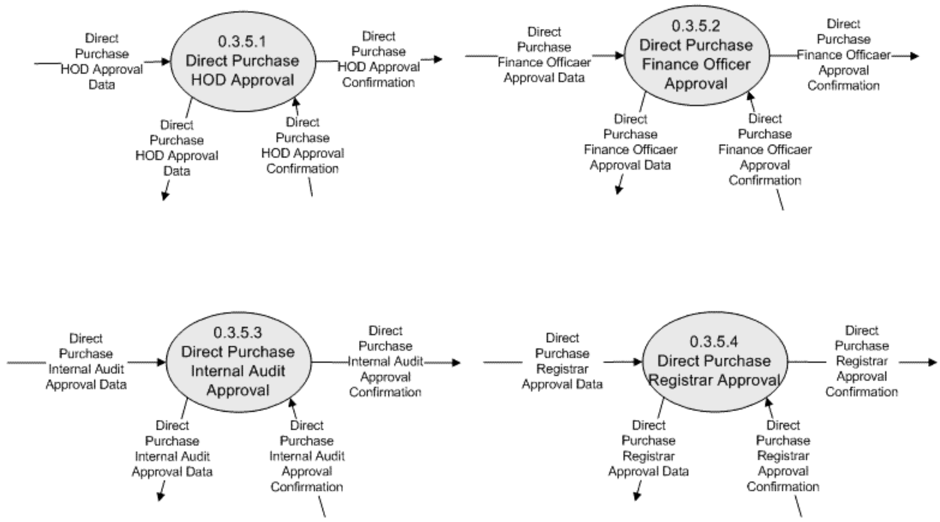


Figure 3.20: Level 3 Direct Purchase Approval

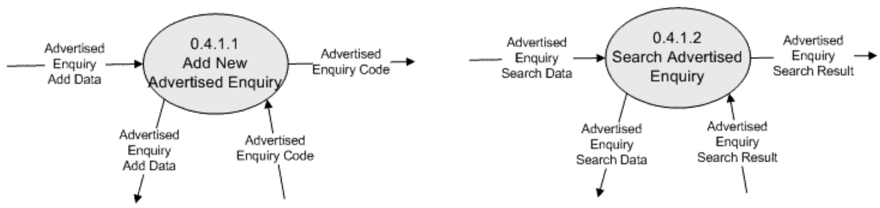


Figure 3.21: Level 3 Initiate Advertised Tender Enquiry

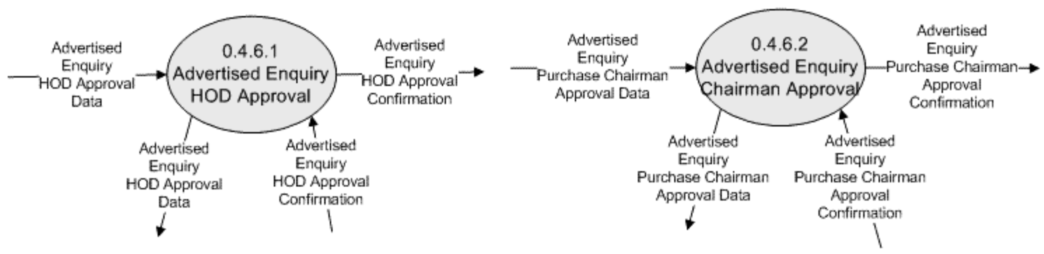


Figure 3.22: Level 3 Advertised Tender Enquiry Approval

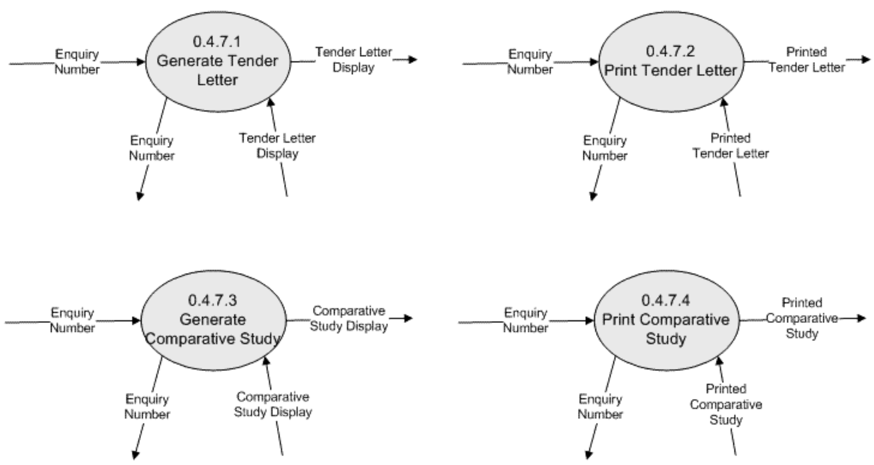


Figure 3.23: Level 3 Generate And Print Advertised Docs

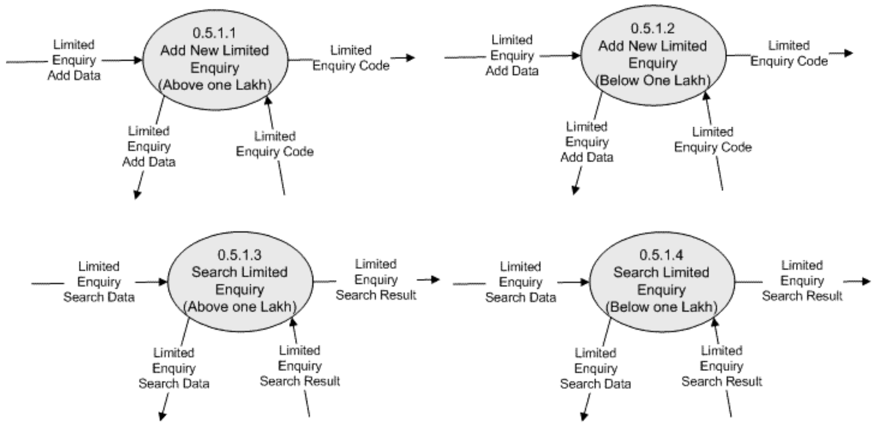


Figure 3.24: Level 3 Initiate Limited Tender Enquiry

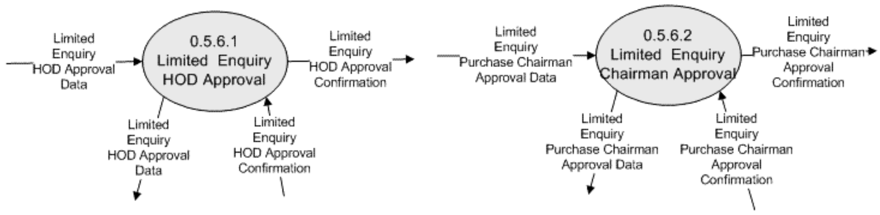


Figure 3.25: Level 3 Limited Tender Enquiry Approval

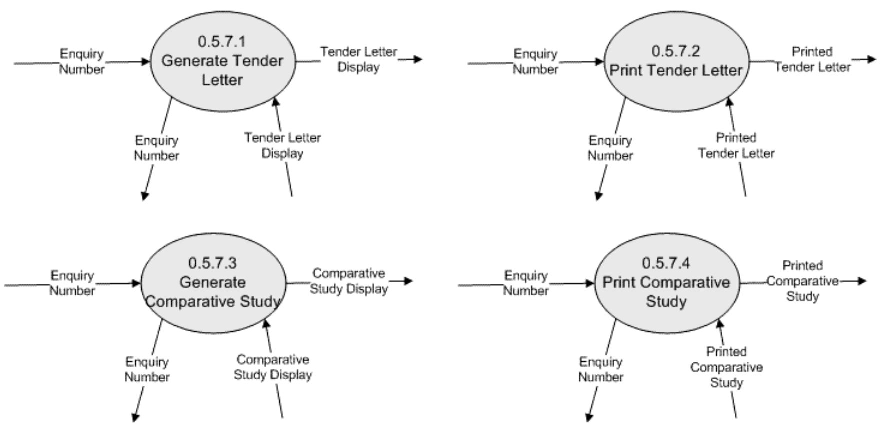


Figure 3.26: Level 3 Generate And Print Limited Tender Enquiry Docs

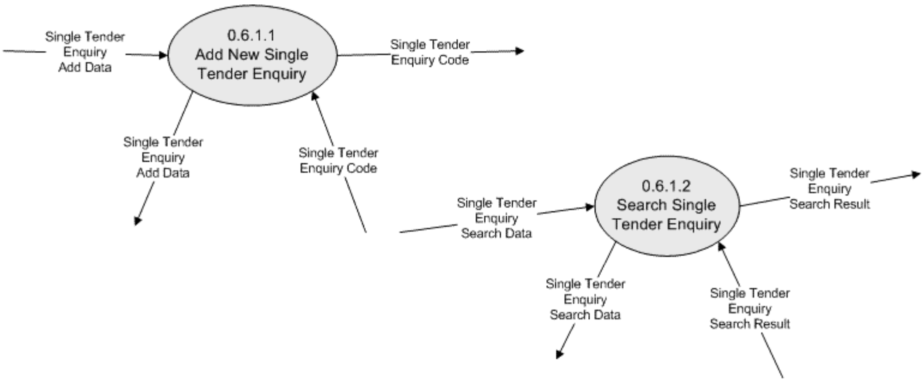


Figure 3.27: Level 3 Initiate Single Tender Enquiry

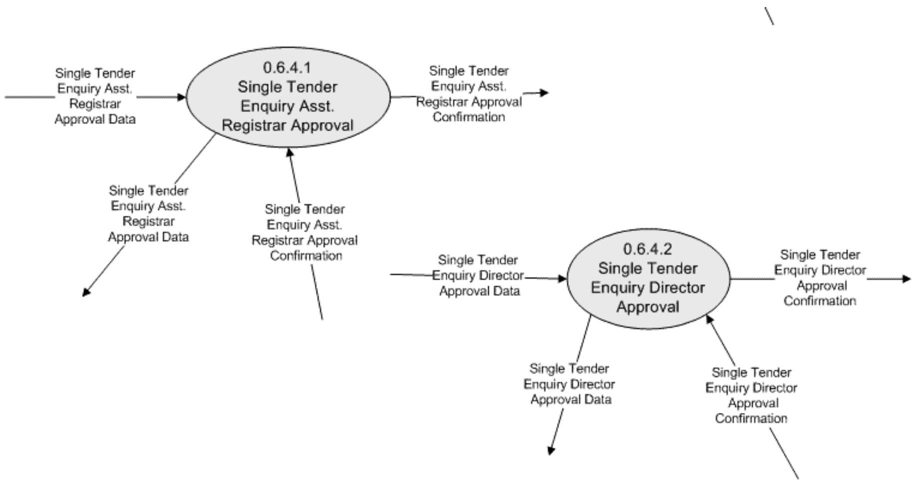


Figure 3.28: Level 3 Single Tender Enquiry Approval

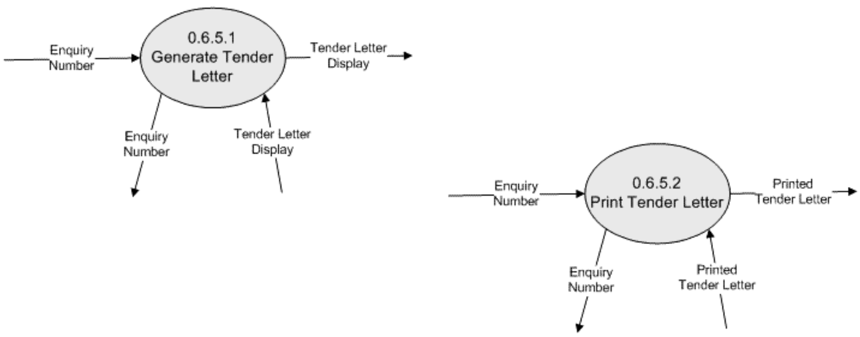


Figure 3.29: Level 3 Generate And Print Single Tender Enquiry Docs

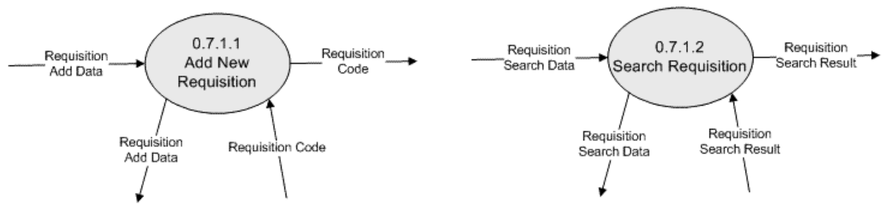


Figure 3.30: Level 3 Initiate Requisition

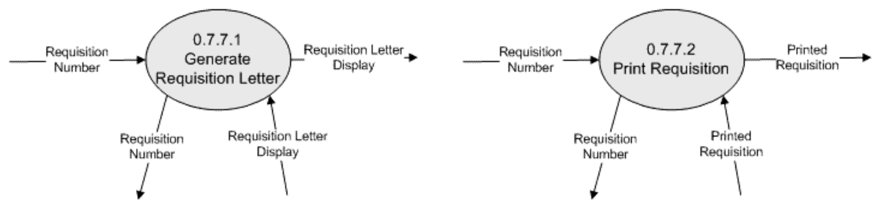


Figure 3.31: Level 3 Generate And Print Requisition Docs

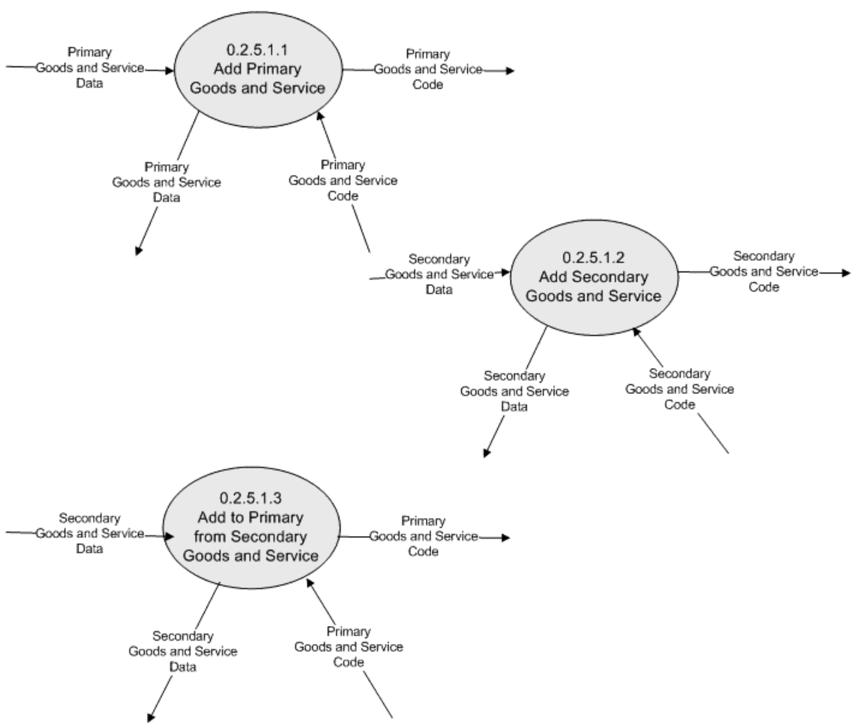


Figure 3.32: Level 4 Add new Goods and Services

3.4 Data Dictionary

0.0) **System**

- User Request = [Login Data, CoA Manage Data, Direct Purchase Manage Data, Advertised Enquiry Manage Data, Limited Enquiry Data, Single Tender Enquiry Manage Data, Requisition Manage Data]
- System Response = [Login Result, CoA Manage Result, Manage Direct Purchase Result, Advertised Enquiry Manage Result, Limited Enquiry Result, Single Tender Enquiry Manage Result, Requisition Manage Result]

0.1) **Manage Login**

- Login Data = Usercode + Password
- Login Result = [Login Successful, Login Unsuccessful]

0.2) **Manage Charts of Accounts**

- CoA Manage Data = [Account Category Data, Account Head Data, Account Sub-Head Manage Data, Fund Manage Data, Goods and Service Data, Supplier Data, Supplier Item Data]
- CoA Manage Result = [Account Category, Account Head Result, Account Sub-Head Manage Result, Fund Manage Result, Goods and Service Manage Result, Supplier Manage Result, Supplier Item Manage Result]

0.2.1) **Manage Account Category**

- Account Category Data = [Account Category Create Data, Search Account Category Data, Update Account Category Data]
- Account Category Result = [Account Category Create Confirmation, Search Account Category Results, Update Account Category Confirmation]

- Account Category Create Data = Account Category Code + Account Category Name
- Search Account Category Data = Account Category Code + Account Category Name
- Update Account Category Data = Account Category Name

0.2.2) **Manage Account Head**

- Account Head Data = [Account Head Add Data, Account Search Head Data, Update Account Head Data]
- Account Head Result = [Account Head Code, Account Head Search Results, Update Account Head Confirmation]
- Account Head Add Data = Account Head Code + Account Head Name
- Account Head Search Data = Account Head Code + Account Head Name
- Update Account Head Data = Account Head Name

0.2.3) **Manage Account Sub-Head**

- Account Sub-Head Manage Data = [New Account Sub-Head Data, Search Account Sub-Head Data, Update Account Sub-Head Data, Account Sub-Head Number]
- Account Sub-Head Manage Result = [Account Sub-Head Confirmation, Search Account Sub-Head Results, Update Account Sub-Head Confirmation, Account Sub-Head Details]
- Account Sub-Head Add Data = [Account Head + Account Sub-Head Name + Account Sub-head Description + Responsible Authority + Approving Authority]

- Search Account Sub-Head Data = [Account Sub-Head Code + Account Sub-Head Name + Account Sub-Head Description]

- Search Account Sub-Head Results = [Account Head + Account Sub-head Code + Account Sub-Head Name + Account Sub-Head Description + Responsible Authority + Approving Authority]

- Update Account Sub-Head Data = [Account Head + Account Sub-Head Name + Account Sub-head Description + Responsible Authority + Approving Authority]

0.2.4) **Manage Fund Allocation**

- Fund Manage Data = [Allocate Funds Data, Search Funds Data, Update Allocation Data, Divert Funds Data, Fund Number]

- Fund Manage Result = [Allocate Funds Confirmation, Search Funds Results, Update Allocation Confirmation, Divert Funds Confirmation, Fund Details]

- Allocate Funds Data = Year + Account Head + Account Sub-head + Allocated Amount

- Search Funds Data = Year + Account Head + Account Sub-head

- Search Funds Results = Year + Account Head + Account Sub-head + Allocated Amount + Spent Amount + Committed Amount + Left Amount

- Update Allocation Data = Fund Number + New Allocation

- Divert Funds Data = Year + From Account Head + From Account Sub-head + To Account Head + To Account Sub-head + Diverted Amount

0.2.5) **Manage Goods and Service**

- Goods and Service Data= [New Goods and Service Data, Goods and Service Search Data, Update Goods and Service]

- Goods and Service Manage Result=[New Goods and Service Code, Goods and Service Search Result, Update Goods and Service Confirmation]
- New Goods and Service Data= [Primary Goods and Service Code, Secondary Goods and Service Code, Secondary to Primary Goods and Service]
- Goods and Service Search Data=[Goods and Service Code, Goods and Service Name]
- Update Goods and Service=[Goods and Service Code, Goods and Service Name]

0.2.6) **Manage Supplier**

- Supplier Data = [New Supplier Data, Search Supplier Data, Update Supplier Data, Supplier Number]
- Supplier Manage Result = [Supplier Confirmation, Search Supplier Results, Update Supplier Confirmation, Supplier Details]
- Supplier Add Data = [Supplier Name + Supplier Address + Phone Number + Contact Person]
- Search Supplier Data = [Supplier Name + Supplier Address + Phone Number + Contact Person + Supplier Code]
- Search Supplier Results = [Supplier Name + Supplier Address + Phone Number + Contact Person + Supplier Code]
- Update Supplier Data = [Supplier Name + Supplier Address + Phone Number + Contact Person]

0.2.7) **Manage Supplier Goods/Services Mapping**

- Supplier Item Data = [Goods/Services Supplier will Provide, Search Supplier Goods/Services Data, Update Supplier Goods/Services Data, Supplier Number]

- Search Supplier Data = [Supplier Name + Supplier Address + Phone Number + Contact Person + Supplier Code]
- Search Supplier Item Results = [Supplier Name + Supplier Address + Phone Number + Contact Person + Supplier Code + Supplier Providing Goods/Services]
- Update Supplier Item Data = [Supplier will provide Goods/Services Data]

0.3) **Manage Direct Purchase**

- Direct Purchase Manage Data = [Direct Purchase Initiate Data, Direct Purchase Item Add Data, Direct Purchase Supplier Add Data, Direct Purchase Bill Data, Direct Purchase Approval Data]
- Manage Direct Purchase Result = [Direct Purchase Initiate Result, Direct Purchase Item Add Confirmation, Direct Purchase Supplier Add Confirmation, Direct Purchase Bill Confirmation, Direct Purchase Approval Confirmation]
- Direct Purchase Initiate Data = [Direct Purchase Add Data, Direct Purchase Search Data]
- Direct Purchase Initiate Result = [Direct Purchase Code, Direct Purchase Search Result]
- Direct Purchase Add Data = Account Sub-head + Direct Purchase Mode + Reason For Mode
- Direct Purchase Search Data = (Account Sub-head) + (Direct Purchase Code) + (Direct Purchase Status)+ (Direct Purchase Type)+ (Date Created
- Direct Purchase Search Result = Direct Purchase Code + Direct Purchase Status+ Direct Purchase Type+ Date Created
- Direct Purchase Item Add Data = Direct Purchase Number + GoodsService + Quantity + Price/Unit

- Direct Purchase Supplier Add Data = Direct Purchase Number + GoodsService + Supplier

- Direct Purchase Bill Data = Direct Purchase Number + GoodsService + Supplier + Bill Number + Bill Date

- Direct Purchase Approval Data = [Direct Purchase HOD Approval Data, Direct Purchase Finance Officer Approval Data, Direct Purchase Internal Audit Approval Data, Direct Purchase Registrar Approval Data]

- Direct Purchase Approval Confirmation = [Direct Purchase HOD Approval Confirmation, Direct Purchase Finance Officer Approval Confirmation, Direct Purchase Internal Audit Approval Confirmation, Direct Purchase Registrar Approval Confirmation]

- Direct Purchase HOD Approval Data = Direct Purchase Number

- Direct Purchase Finance Officer Approval Data = Direct Purchase Number

- Direct Purchase Internal Audit Approval Data = Direct Purchase Number

- Direct Purchase Registrar Approval Data = Direct Purchase Number

0.4) **Manage Advertised Enquiry**

- Advertised Enquiry Manage Data = [Advertised Enquiry Initiate Data, Advertised Enquiry Item Add Data, Advertised Enquiry Supplier Add Data, Advertised Enquiry Tech Eval Data, Advertised Enquiry Financial Eval Data, Advertised Enquiry Approval Data, Enquiry Number]

- Advertised Enquiry Manage Result = [Advertised Enquiry Initiate Result, Advertised Enquiry Item Add Confirmation, Advertised Enquiry Supplier Add Confirmation, Advertised Enquiry Tech Eval Confirmation, Advertised Enquiry Financial Eval Confirmation, Advertised Enquiry Approval Confirmation]

- Advertised Enquiry Initiate Data = [Advertised Enquiry Add Data, Advertised Enquiry Search Data]
- Advertised Enquiry Initiate Result = [Advertised Enquiry Code, Advertised Enquiry Search Result]
- Advertised Enquiry Add Data = DepartmentProjectIndicator + DepartmentProject + Quotation Format + Quotation Validity + Min Warranty + Bid Security + Performance Security + Pre-Bid Conference Date + Last Date of Quotation Receipt + [Quotation Opening Date, TechnoFinBidDate]
- TechnoFinBidDate = Techno-Commercial Bid Opening Date + Financial Bid Opening Date
- Advertised Enquiry Search Data = (Enquiry Code) + (Enquiry Status)+ (DepartmentProjectIndicator)+ (DepartmentProject)+ (Quotation Format)+ (Person In Charge) + (Date Created)
- Advertised Enquiry Search Result = Enquiry Number + Enquiry Code + DepartmentProject + Enquiry Status + Quotation Format + Person In Charge + Date Created
- Advertised Enquiry Item Add Data = Enquiry Number + GoodsService + Quantity + Technical Details
- Advertised Enquiry Supplier Add Data = Enquiry Number + GoodsService + Supplier
- Advertised Enquiry Tech Eval Data = Enquiry Number + GoodsService + Supplier + Technical Marks
- Advertised Enquiry Financial Eval Data = Enquiry Number + GoodsService + Supplier + Response Date + Net Price + (Entry Tax)+ (Excise Duty)+

(VAT/CST)+ (Delivery Charges)+ (Other Charges)+ Warranty + (Payment Terms)

- Advertised Enquiry Approval Data = [Advertised Enquiry HOD Approval Data, Advertised Enquiry Purchase Chairman Approval Data]

- Advertised Enquiry Approval Confirmation = [Advertised Enquiry HOD Approval Confirmation, Advertised Enquiry Purchase Chairman Approval Confirmation]

- Advertised Doc = [Tender Letter Display, Printed Tender Letter, Comparative Study Display, Printed Comparative Study]

0.5) **Manage Limited Enquiry**

- Limited Enquiry Manage Data = [Limited Enquiry Initiate Data, Limited Enquiry Item Add Data, Limited Enquiry Supplier Add Data, Limited Enquiry Tech Eval Data, Limited Enquiry Financial Eval Data, Limited Enquiry Approval Data, Enquiry Number]

- Limited Enquiry Manage Result = [Limited Enquiry Initiate Result, Limited Enquiry Item Add Confirmation, Limited Enquiry Supplier Add Confirmation, Limited Enquiry Tech Eval Confirmation, Limited Enquiry Financial Eval Confirmation, Limited Enquiry Approval Confirmation]

- Limited Enquiry Initiate Data = [Limited Enquiry Add Data(Above One Lakh), Limited Enquiry Add Data(Below One Lakh), Limited Enquiry Search Data(Above One Lakh), Limited Enquiry Search Data(Above One Lakh)]

- Limited Enquiry Initiate Result = [Limited Enquiry Code, Limited Enquiry Search Result]

- Limited Enquiry Add Data(Above one Lakh) = Department Project Indicator + Department Project + Quotation Format + Quotation Validity + Min

Warranty + Bid Security + Performance Security + Pre-Bid Conference Date + Last Date of Quotation Receipt + [Quotation Opening Date, TechnoFinBidDate]

- Limited Enquiry Add Data(Below one Lakh) = Department Project Indicator + Department Project + Date of Tender Submit + Date of Tender Open
- TechnoFinBidDate = Techno-Commercial Bid Opening Date + Financial Bid Opening Date
- Limited Enquiry Search Data(Above One Lakh) = (Enquiry Code) + (Enquiry Status)+ (DepartmentProjectIndicator)+ (DepartmentProject)+ (Quotation Format)+ (Person In Charge) + (Date Created)
- Limited Enquiry Search Data(Below One Lakh) =(Enquiry Code) + (Enquiry Status)+ (DepartmentProjectIndicator)+ (DepartmentProject)+ (Person In Charge) + (Date Created)
- Limited Enquiry Search Result(Above One Lakh) = Enquiry Number + Enquiry Code + DepartmentProject + Enquiry Status + Quotation Format + Person In Charge + Date Created
- Limited Enquiry Search Result(Below One Lakh) = Enquiry Number + Enquiry Code + DepartmentProject + Enquiry Status + Date of Tender Submit + Date of Tender Open + Person In Charge + Date Created
- Limited Enquiry Item Add Data(Above/Below One Lakh) = Enquiry Number + GoodsService + Quantity + Technical Details
- Limited Enquiry Supplier Add Data(Above/Below One Lakh) = Enquiry Number + GoodsService + Supplier
- Limited Enquiry Tech Eval Data = Enquiry Number + GoodsService + Supplier + Technical Marks

- Limited Enquiry Financial Eval Data = Enquiry Number + GoodsService + Supplier + Response Date + Net Price + (Entry Tax)+ (Excise Duty)+ (VAT/CST)+ (Delivery Charges)+ (Other Charges)+ Warranty + (Payment Terms

- Limited Enquiry Approval Data = [Limited Enquiry HOD Approval Data, Limited Enquiry Purchase Chairman Approval Data]

- Limited Enquiry Approval Confirmation = [Limited Enquiry HOD Approval Confirmation, Limited Enquiry Purchase Chairman Approval Confirmation]

- Limited Doc = [Tender Letter Display, Printed Tender Letter, Comparative Study Display, Printed Comparative Study]

0.6) **Manage Single Tender Enquiry**

- Single Tender Enquiry Manage Data = [Single Tender Enquiry Initiate Data, Single Tender Enquiry Item Add Data, Single Tender Enquiry Supplier Add Data, Single Tender Enquiry Approval Data, Enquiry Number]

- Single Tender Enquiry Manage Result = [Single Tender Enquiry Initiate Result, Single Tender Enquiry Item Add Confirmation, Single Tender Enquiry Supplier Add Confirmation, Single Tender Enquiry Approval Confirmation]

- Single Tender Enquiry Initiate Data = [Single Tender Enquiry Add Data, Single Tender Enquiry Search Data]

- Single Tender Enquiry Initiate Result = [Single Tender Enquiry Code, Single Tender Enquiry Search Result]

- Single Tender Enquiry Add Data = DepartmentProjectIndicator + DepartmentProject + Approximate Cost + Reasons]

- Single Tender Enquiry Search Data = (Enquiry Code) + (Enquiry Status)+ (DepartmentProjectIndicator)+ (DepartmentProject)+ (Person In Charge) + (Date Created)
- Single Tender Enquiry Search Result = Enquiry Number + Enquiry Code + DepartmentProject + Enquiry Status + Person In Charge + Date Created + Approximate Cost
- Single Tender Enquiry Item Add Data = Enquiry Number + Goods/Service + Quantity
- Single Tender Enquiry Supplier Add Data = Enquiry Number + Goods/Service + Supplier
- Single Tender Enquiry Approval Data = [Single Tender Enquiry Asst. Registrar(Internal Audit) Approval Data, Single Tender Enquiry Director Approval Data]
- Single Tender Enquiry Approval Confirmation = [Single Tender Enquiry Asst. Registrar(Internal Audit) Confirmation, Single Tender Enquiry Director Approval Confirmation]
- Single Tender Doc = [Tender Letter Display, Printed Tender Letter]

0.7) **Manage Requisition**

- Requisition Manage Data = [Requisition Initiate Data, Requisition Number, Requisition HOD-PI Approval Data, Requisition Internal Audit Approval Data, Requisition Finance Approval Data, Requisition Sanctioning Approval Data]
- Requisition Manage Result = [Requisition Initiate Result, Requisition Details, Requisition HOD-PI Approval Confirmation, Requisition Internal Audit Approval Confirmation, Requisition Finance Approval Confirmation, Requisition Sanctioning Approval Confirmation]

- Requisition Initiate Data = [Requisition Add Data, Requisition Search Data]
- Requisition Initiate Result = [Requisition Code, Requisition Search Result]
- Requisition Add Data = Enquiry Code + Account Head + Account Sub-Head + Routine purchase procedure followed + (Justification)
- Requisition Search Data = (Requisition Code) + (Requisition Status)+ (DepartmentProjectIndicator)+ (DepartmentProject)+ (Enquiry Code)+ (Person In Charge) + (Enquiry Type) + (Requisition Raised Date)
- Requisition Search Result = Requisition Number + Requisition Code +Enquiry Number + Enquiry Code + Account Head + Account Sub-Head + Requisition Status + Person In Charge
- Requisition Internal Approval Data = VettedNon-vetted + Routine purchase procedure followed + (Special purchase procedure followed) + (Other Observations) + Recommended-Not recommended + (Not recommended Reasons) + Audit Assistant Approval + Assistant Registrar Audit Approval
- Requisition Doc = [Requisition Letter Display, Printed Requisition]

3.5 Psuedo Code

This section contains the psuedo code for various modules:

3.5.1 Manage Login

(i) Enter username and password.

(ii) If these details are correct,

   (a) Add the usercode to the session variable value.

   (b) Otherwise, prompt the error to the user.

3.5.2 Manage Chart of Accounts

3.4.2.1 Manage Account Category

3.4.2.1.1 Create Account Category

(i) Select the type of Account Category to be created.

(ii) Give Account Category Name and Description.

(iii) Click on Add to add the Account Category to the database.

3.4.2.1.2 Update Account Category

(i) Select the Account Category to be modified.

(ii) Enter the update information.

(iii) Click on Update to update the Account Category to the database.

3.4.2.1.3 Search Account Category

(i) Fill in search criteria.

(ii) If action results in successful search,

   (a) Show the search results.

   (b) Otherwise prompt the user about the unsuccessful search.

3.4.2.2 Manage Account Head

3.4.2.2.1 Create Account Head

(i) Select the Account Category Name which already created.

(ii) Give Account Head Name and Description.

(iii) Click on Save Button to save the Account Head to the database.

3.4.2.2.2 Update Account Head

(i) Select the Account Head to be modified.

(ii) Enter the update information.

(iii) Click on Update to update the Account Head to the database.

3.4.2.1.3 Search Account Head

(i) Fill in search criteria.

(ii) If action results in successful search,

   (a) Show the search results.

   (b) Otherwise prompt the user about the unsuccessful search.

3.4.2.3 Manage Account Sub-Head

3.4.2.3.1 Create Account Sub-Head

(i) Select Account Head Name, Responsible and Approving Authority.

(ii) Give Account Sub-Head Name and Description.

(iii) Click on Save to add the Account Sub-Head to the database.

3.4.2.3.2 Update Account Sub-Head

(i) Select Account Sub-Head to be modified.

(ii) Enter the update information.

(iii) Click on Update to update Account Sub-Head to the database.

3.4.2.3.3 Search Account Sub-Head

(i) Fill in search criteria.

(ii) If action results in successful search,

   (a) Show the search results.

   (b) Otherwise prompt the user about the unsuccessful search.

3.4.2.4 Manage Fund Allocation

3.4.2.4.1 Allocate Funds

(i) Select the year of Fund Allocation.

(ii) Select the Account Head and Sub-Head.

(iii) Enter the Allocated Amount and click ‘OK’.

(iv) Save allocation in database.

3.4.2.4.2 Search Allocation

(i) Fill in search criteria.

(ii) If action results in successful search,

   (a) Show the search results.

(b) Otherwise prompt the user about the unsuccessful search.

3.4.2.4.3 Update Allocation

(i) Select the Fund Allocation to be modified.

(ii) Enter the new Allocation.

(iii) Click the 'Save' button to update the allocation in the database.

3.4.2.4.4 Divert Funds

(i) Select the year in which you want to divert Funds.

(ii) Select the Head and Sub-Head from which you want to divert Fund.

(iii) Select the Head and Sub-Head to which you want to divert Fund. Some funds must be already allocated here.

(iv) Enter the Diverted Amount. This must be available in the From Sub-Head.

(v) Click the 'Save' button to save the divertion in the database.

3.4.2.4.5 View Fund Details

(i) Select the Fund Allocation whose details you want to see.

(ii) Click the 'View Details' button.

(iii) Show details of of that fund.

3.4.2.4.6 Print Fund Details

(i) Click the 'Print Details' button in the 'View Fund Details' page to print the details.

(ii) Open a pop-up to print details.

3.4.2.5 Goods and Service

3.4.2.5.1 Add New Goods and Service *3.4.2.5.1.1 Add Primary Goods and Service*

(i) Select Item Type and Excise Duty from the drop down list.

(ii) Enter Item Name and Measurement Unit.

(iii) Click on Save button to save the primary Goods and Service to the database.

3.4.2.5.1.2 Add Secondary Goods and Service

(i) Select Item Type and Excise Duty from the drop down list.

(ii) Enter Item Name and Measurement Unit.

(iii) Click on Save button to save the secondary Goods and Service to the database.

3.4.2.5.1.3 Add to Primary From Secondary Goods and Service

(i) Select a row from Secondary Goods and Service Table.

(ii) Click on Secondary to Primary Button

(iii) Item deleted from Secondary table and inserted in Primary Goods and Service Table.

3.4.2.5.2 Search Goods and Service

(i) Fill in search criteria.

(ii) If action results in successful search,

   (a) Show the search results.

   (b) Otherwise prompt the user about the unsuccessful search.

3.4.2.5.3 Update Goods and Service

(i) Select the Primary/Secondary Goods and Service to be modified.

(ii) Enter the Update Information.

(iii) Click on Update to update Primary/Secondary Goods and Service to the Database.

3.4.2.6 Manage Supplier

3.4.2.6.1 Create Supplier

(i) Give Supplier information.

(ii) Click on Save to add the Supplier to the database.

3.4.2.6.2 Update Supplier

(i) Select Supplier to be modified.

(ii) Enter the update information.

(iii) Click on Update to update the Supplier in the database.

3.4.2.6.3 Search Supplier

(i) Fill in search criteria.

(ii) If action results in successful search,

   (a) Show the search results.

   (b) Otherwise prompt the user about the unsuccessful search.

3.4.2.7 Manage Supplier Goods/Service Mapping:

3.4.2.7.1 Create Supplier Goods/Service Mapping:

(i) Select Supplier to add items it supplies.

(ii) Enter the Items information.

(iii) Click on Save to add Supplier Goods/Services information in the database.

3.4.2.7.2 Update Supplier Goods/Service Mapping:

(i) Select Supplier to be modified.

(ii) Select the Map Goods/Services Option.

(iii) Enter the update information.

(iv) Click on Update to update the Supplier in the database.

3.4.2.7.3 Search Supplier Goods/Service Mapping:

(i) Fill in search criteria.

(ii) If action results in successful search,

  (a) Show the search results.

  (b) Otherwise prompt the user about the unsuccessful search.

3.5.3 Manage Direct Purchase

3.4.3.1 Initiate Direct Purchase

(i) Select Sub-head from the drop down.

(ii) Select Purchase Mode from the drop down and to give a reason for selecting the same.

(iii) Go to step 3.4.3.2.

3.4.3.2 Item Selection

(i) Search an existing item. [optional]

(ii) Select the items to be purchased from the table.

(iii) Fill in the quantity and the unit price of all the selected items.

(iv) Click Discard changes [optional], if not saved, to discard all the changes from the last save. You can go back to step (iii) or may proceed for the (v), if items selected.

(v) Click Save Changes to save the items selected.

(vi) Check for the details filled. If details are filled correctly-

   (a) Prompt the confirmation about the saving to the user.

   (b) Reflect the changes in the table being shown on the web-page.

   (c) Otherwise, prompt the user about the error.

(vii) Click on Proceed to proceed.

(viii) Fill in more amounts [optional], if required, and give a reason for that.

(ix) Fill the advance requested [optional] , if Advance Mode was selected at Step 3.4.3.1.

(x) Click OK to proceed further.

3.4.3.3 Supplier Selection

(i) After approval from HOD, select the Direct Purchase from the table and click proceed.

(ii) Select an item from the item drop down.

(iii) Search through the supplier to narrow down the selection [optional].

(iv) Click Discard changes [optional], if not saved, to discard all the changes from the last save. You can go back to step (iii) or may proceed for the (v), if items selected.

(v) Click Save Changes to save the items selected.

(vi) Check for the details filled. If details are filled correctly-

  (a) Prompt the confirmation about the saving to the user.

  (b) Reflect the changes in the table being shown on the web-page.

  (c) Otherwise, prompt the user about the error.

(vii) Click on Proceed to proceed.

3.4.3.4 Fill Bill Details

(i) After Approval from HOD, select the Direct Purchase from the table and click proceed.

(ii) Search through the item or supplier details to narrow down the selection [optional].

(iii) Select an entry from the table and click on View Details to view the details of that particular direct purchase [optional].

(iv) Fill in the details (Bill Number and the Bill Date).

(v) Click Discard changes [optional], if not saved, to discard all the changes from the last save. You can go back to step (iii) or may proceed for the (v), if items selected.

(vi) Click Save Changes to save the items selected.

(vii) Check for the details filled. If details are filled correctly-

  (a) Prompt the confirmation about the saving to the user.

  (b) Reflect the changes in the table being shown on the web-page.

(viii) Click on Proceed to proceed.

3.4.3.5 Approval

(i) Search through the item or supplier details to narrow down the selection [optional].

(ii) Select a direct purchase and click approve to approve.

(iii) Prompt user with the approval confirmation.

3.5.4 Manage Advertised Enquiry

3.4.4.1 Initiate Advertised Enquiry

3.4.4.1.1 Add New Advertised Enquiry

(i) Enter the Initiation Data.

(ii) Click 'Save' button to initiate the Enquiry.

(iii) Note the Enquiry Code displayed for future use.

(iv) Go to step 3.4.4.2.

3.4.4.1.2 Search Advertised Enquiry

(i) Fill in the Search Criteria.

(ii) Click 'Search' button.

(iii) If action results in successful search,

 (a) Show the search results.

 (b) Otherwise prompt the user about the unsuccessful search.

3.4.4.2 Add Goods and Services

(i) Start typing Goods/Service name in the Goods/Service textbox. The system will provide the choices available. If your desired Goods/Service is not provided, go to step 3.4.2.5.1.

(ii) Enter the 'Quantity' and 'Technical Details desired'.

(iii) Click the 'Save Goods/Service' button to save the Goods/service under this Enquiry.

(iv) If you want to delete an already added Goods/Service select the row and click 'Delete Goods/Service'.

(v) Click the 'Add Suppliers of Goods/Service' button to go to step 3.4.4.3.

3.4.4.3 Add Suppliers

(i) Select the Goods/Service from the Goods/Service dropdown list.

(ii) Select/Unselect the Suppliers by checking/unchecking the checkbox.

(iii) Click the 'Save Goods/Service' button to save the Goods/service under this Enquiry.

(iv) After adding the Suppliers, click the 'Go Back To Adding Goods/Services' button.

(v) Go to Step 3.4.4.7.1.

3.4.4.4 Technical Evaluation

(i) On the 'Initiate Advertised Enquiry' page select the appropriate Enquiry whose format is 'Two-Part Bid' and status is 'Tender Issued'. Then click on 'Modify an Enquiry' button.

(ii) Enter the Total Technical Marks out of 100.

(iii) Enter the cut-off Technical marks.

(iv) Select the Supplier from ‘Supplier/Firm Name’ dropdown list to narrow the result [optional].

(v) Enter Technical Marks for each row followed by clicking the ‘Save’ button for that row.

(vi) After entering Technical Marks for all rows, click the ‘Finish Technical Evaluation and Go To Financial Response’ button to go to step 3.4.4.5.

3.4.4.5 Financial Evaluation

(i) Use

  (a) Step vi) of 3.4.4.4 to arrive here, or

  (b) On the ‘Initiate Advertised Enquiry’ page select the appropriate Enquiry whose format is ‘Two-Part Bid’ and status is ‘Technical Evaluation Done’. Then click on ‘Modify an Enquiry’ button, or

  (c) On the ‘Initiate Advertised Enquiry’ page select the appropriate Enquiry whose format is ‘Single Bid’ and status is ‘Tender Issued’. Then click on ‘Modify an Enquiry’ button.

(ii) Select a row from the table and click the ‘Enter Supplier Response’ button.

(iii) Enter the Supplier response data and click ‘Save’.

(iv) After entering the response of all Suppliers, go to step 3.4.4.7.3.

3.4.4.6 Advertised Enquiry Approval

[Only for HOD and Chairman of Department Purchase Committee] **3.4.4.6.1 Advertised Enquiry HOD Approval**

(i) Open the 'Pending Advertised Enquiry' page.

(ii) Search the appropriate Enquiry using the 'Search an Enquiry' button [optional].

(iii) Select the Enquiry to be approved and click the 'Approve a Pending Enquiry' button.

(iv) If you are HOD of the Department, Click on 'Approve as HOD'.

(v) If user credentials are right, approve the Enquiry, otherwise display an error message.

3.4.4.6.2 Advertised Enquiry Chairman Approval

(i) Open the 'Pending Advertised Enquiry' page.

(ii) Search the appropriate Enquiry using the 'Search an Enquiry' button [optional].

(iii) Select the Enquiry to be approved and click the 'Approve a Pending Enquiry' button.

(iv) If you are Chairman of Purchase Committee click on 'Approve as Chairman'.

(v) If user credentials are right, approve the Enquiry, otherwise display an error message.

3.4.4.7 Generate and Print Advertised Docs

3.4.4.7.1 Generate Tender Letter

(i) From step v) of 3.4.4.3.

(ii) Click the 'Finish Adding Goods/Services and Issue Tender' button.

(iii) If more than one Goods/Services are in the enquiry, prompt the user to enter 'Bid For'. It is the name that will appear on Tender Letter.

(iv) Generate Tender Letter.

(v) Go to step 3.4.4.7.2 [optional].

3.4.4.7.2 Print Tender Letter

(i) Click the 'Print Tender Letter' button.

(ii) Open a pop-up to print the Tender Letter.

3.4.4.7.3 Generate Comparative Study

(i) From step iv) of 3.4.4.5.

(ii) Click the 'Prepare Comparative Study' button.

(iii) Generate Comparative Study.

(iv) Go to Step 3.4.4.7.4 [optional].

3.4.4.7.4 Print Comparative Study

(i) From step v) of 3.4.4.3.

(ii) Click the 'Print Comparative Study' button.

(iii) Open a pop-up to print the Comparative Study.

3.5.5 Manage Limited Enquiry

3.4.5.1 Initiate Limited Enquiry

3.4.5.1.1 Add New Limited Enquiry(Above One Lakh)

(i) Enter the Initiation Data.

(ii) Click 'Save' button to initiate the Enquiry.

(iii) Note the Enquiry Code displayed for future use.

(iv) Go to step 3.4.5.2.

3.4.5.1.2 Add New Limited Enquiry(Below One Lakh)

(i) Enter the Initiation Data.

(ii) Click 'Save' button to initiate the Enquiry.

(iii) Note the Enquiry Code displayed for future use.

(iv) Go to step 3.4.5.2.

3.4.5.1.3 Search Limited Enquiry(Above One Lakh)

(i) Fill in the Search Criteria.

(ii) Click 'Search' button.

(iii) If action results in successful search,

   (a) Show the search results.

   (b) Otherwise prompt the user about the unsuccessful search.

3.4.5.1.4 Search Limited Enquiry(Below One Lakh)

(i) Fill in the Search Criteria.

(ii) Click 'Search' button.

(iii) If action results in successful search,

   (a) Show the search results.

   (b) Otherwise prompt the user about the unsuccessful search.

3.4.5.2 Add Goods and Services

(i) Start typing Goods/Service name in the Goods/Service textbox. The system will provide the choices available. If your desired Goods/Service is not provided, go to step 3.4.2.5.1.

(ii) Enter the 'Quantity' and 'Technical Details desired'.

(iii) Click the 'Save Goods/Service' button to save the Goods/service under this Enquiry.

(iv) If you want to delete an already added Goods/Service select the row and click 'Delete Goods/Service'.

(v) Click the 'Add Suppliers of Goods/Service' button to go to step 3.4.5.3.

3.4.5.3 Add Suppliers

(i) Select the Goods/Service from the Goods/Service dropdown list.

(ii) Select/Unselect the Suppliers by checking/unchecking the checkbox.

(iii) Click the 'Save Goods/Service' button to save the Goods/service under this Enquiry.

(iv) After adding the Suppliers, click the 'Go Back To Adding Goods/Services' button.

(v) Go to Step 3.4.5.7.1.

3.4.5.4 Technical Evaluation

(i) On the 'Initiate Limited Enquiry' page select the appropriate Enquiry whose format is 'Two-Part Bid' and status is 'Tender Issued'. Then click on 'Modify an Enquiry' button.

(ii) Enter the Total Technical Marks out of 100.

(iii) Enter the cut-off Technical marks.

(iv) Select the Supplier from 'Supplier/Firm Name' dropdown list to narrow the result [optional].

(v) Enter Technical Marks for each row followed by clicking the 'Save' button for that row.

(vi) After entering Technical Marks for all rows, click the 'Finish Technical Evaluation and Go To Financial Response' button to go to step 3.4.5.5.

3.4.5.5 Financial Evaluation

(i) Use

  (a) Step vi) of 3.4.4.4 to arrive here, or

  (b) On the 'Initiate Limited Enquiry' page select the appropriate Enquiry whose format is 'Two-Part Bid' and status is 'Technical Evaluation Done'. Then click on 'Modify an Enquiry' button, or

  (c) On the 'Initiate Limited Enquiry' page select the appropriate Enquiry whose format is 'Single Bid' and status is 'Tender Issued'. Then click on 'Modify an Enquiry' button.

(ii) Select a row from the table and click the 'Enter Supplier Response' button.

(iii) Enter the Supplier response data and click 'Save'.

(iv) After entering the response of all Suppliers, go to step 3.4.5.7.3.

3.4.5.6 Limited Enquiry Approval

[Only for HOD and Chairman of Department Purchase Committee] **3.4.5.6.1 Limited Enquiry HOD Approval**

(i) Open the 'Pending Limited Enquiry' page.

(ii) Search the appropriate Enquiry using the 'Search an Enquiry' button [optional].

(iii) Select the Enquiry to be approved and click the 'Approve a Pending Enquiry' button.

(iv) If you are HOD of the Department, Click on 'Approve as HOD'.

(v) If user credentials are right, approve the Enquiry, otherwise display an error message.

3.4.5.6.2 Limited Enquiry Chairman Approval

(i) Open the 'Pending Limited Enquiry' page.

(ii) Search the appropriate Enquiry using the 'Search an Enquiry' button [optional].

(iii) Select the Enquiry to be approved and click the 'Approve a Pending Enquiry' button.

(iv) If you are Chairman of Purchase Committee click on 'Approve as Chairman'.

(v) If user credentials are right, approve the Enquiry, otherwise display an error message.

3.4.5.7 Generate and Print Advertised Docs

3.4.5.7.1 Generate Tender Letter

(i) From step v) of 3.4.5.3.

(ii) Click the 'Finish Adding Goods/Services and Issue Tender' button.

(iii) If more than one Goods/Services are in the enquiry, prompt the user to enter 'Bid For'. It is the name that will appear on Tender Letter.

(iv) Generate Tender Letter.

(v) Go to step 3.4.5.7.2 [optional].

3.4.5.7.2 Print Tender Letter

(i) Click the 'Print Tender Letter' button.

(ii) Open a pop-up to print the Tender Letter.

3.4.5.7.3 Generate Comparative Study

(i) From step iv) of 3.4.5.5.

(ii) Click the 'Prepare Comparative Study' button.

(iii) Generate Comparative Study.

(iv) Go to Step 3.4.5.7.4 [optional].

3.4.4.7.4 Print Comparative Study

(i) From step v) of 3.4.5.3.

(ii) Click the 'Print Comparative Study' button.

(iii) Open a pop-up to print the Comparative Study.

3.5.6 Manage Single Enquiry

3.4.6.1 Initiate Single Tender Enquiry

(i) Select Department Project Indicator.

(ii) Select Department Project Name.

(iii) Enter Single Tender Information.

(iv) Click on Save to initiate the Single Tender Enquiry.

3.4.6.2 Item Selection

(i) Search an existing item.[optional]

(ii) Select Department Project Name.

(iii) Fill the quantity.

(iv) Click on Add to add item in the Single Tender Enquiry.

3.4.6.3 Supplier Selection

(i) Select a Supplier from the given list of supplier for the selected item.

(ii) Click on Add to add supplier for the item.

3.4.6.4 Approval

(i) Search through the list of pending for approval Single Tender Enquiry for the approval.

(ii) Select the Single Tender Enquiry to be approved.

(iii) Prompt the approval confirmation.

3.5.7 Manage Requisition

3.4.7.1 Initiate Requisition

3.4.7.1.1 Add New Requisition

(i) Enter the Initiation Data.

(ii) Use the ‘Search’ functionality to search for your approved Enquiries.

(iii) Click ‘Save’ button to initiate the Requisition.

(iv) Note the Requisition Code displayed for future use.

3.4.7.1.2 Search Requisition

(i) Fill in the Search Criteria.

(ii) Click ‘Search’ button.

(iii) If action results in successful search,

  (a) Show the search results.

  (b) Otherwise prompt the user about the unsuccessful search.

3.4.7.2 View Details of Requisition

(i) In the ‘Initiate Requisition’ page select a Requisition and click the ’View Details’ button.

(ii) Redirect the user to a new page that shows the details of the selected Requisition.

3.4.7.3 HOD-PI Approval

[Only for HOD of Department or PI of Project]

(i) In the ‘HOD/PI Approval’ page, use the ‘Search’ functionality to find the appropriate Requisition [optional].

(ii) If you are the HOD/PI of that Department/Project, click the ’Approve a Requisition’ button to go to approval page.

(iii) Click the ‘Approve as HOD’ button to approve.

(iv) If the user credentials are right, approve the Requisition, otherwise display error message.

3.4.7.4 Internal Audit Approval

[Only for Audit Assistant or Assistant Registrar (IA)]

(i) In the 'Internal Audit Approval' page, use the 'Search' functionality to find the appropriate Requisition [optional].

(ii) If you are the Audit Assistant or Assistant Registrar, click the 'Approve a Requisition' button to go to approval page.

(iii) (a) If you are Audit Assistant, click the 'Approve as Audit Assistant' button and enter the approval data. Then click 'Save'.

   (b) If you are Assistant Registrar (IA) and the requisition is already approved by Audit Assistant, click the 'Approve as Assistant Registrar' button.

(iv) If the user credentials are right, approve the Requisition, otherwise display error message.

3.4.7.5 Finance Approval

[Only for Finance Officer]

(i) In the 'Finance Approval' page, use the 'Search' functionality to find the appropriate Requisition [optional].

(ii) If you are the Finance Officer, click the 'Approve a Requisition' button to go to approval page.

(iii) Click the 'Approve as Finance Officer' button to approve.

(iv) Display the Funds Remaining in the Account Head for this year. Accordingly, enable or disable the 'Approve' button.

(v) Click on 'Approve' button.

(vi) If the user credentials are right, approve the Requisition, otherwise display error message.

(vii) If the Sanctioning Authority of this Requisition is HOD/PI, approve fund Sanctioning.

3.4.7.6 Fund Sanctioning

[Only for Sanctioning Authority - Director, Dean]

(i) In the 'Sanctioning Authority Approval' page, use the 'Search' functionality to find the appropriate Requisition [optional].

(ii) If you are the Sanctioning Authority of the Requisition, click the 'Approve a Requisition' button to go to approval page.

(iii) Click the 'Approve as Sanctioning Authority' button to approve.

(iv) If the user credentials are right, approve the Requisition, otherwise display error message.

3.4.7.7 Generate and Print Requisition

3.4.7.7.1 Generate Requisition Letter

(i) Select the appropriate Requisition and click the 'View Details of a Requisition' button.

(ii) Generate the Requisition.

3.4.7.7.2 Print Requisition

(i) Click the 'Print Requisition Statement' button.

(ii) Open a pop-up to print the Requisition.

Chapter 4

Implementation And Results

The pbjective of this chaper is to describe the results obtained and the implementations used to develop the system. This is done with the help of well explained snapshots of web application developed as well as that of tables and views used, as described in the following sections.

4.1 Graphical User Interface

A Typical page of the design for the Purchase System looked like that in Fig. 4.1 on page 82.

The Name of Institute that appears at the top is actually a picture made from Adobe Photoshop. It can be easily changed.

(i) There is a help button at the top too. Clicking it opens a help pop-up for the concerned page (Fig. 4.2 on page 83).

(ii) The help pop-up contains information about:

  - What the page is about?
  - What are the functionalities associated with the page (buttons)?

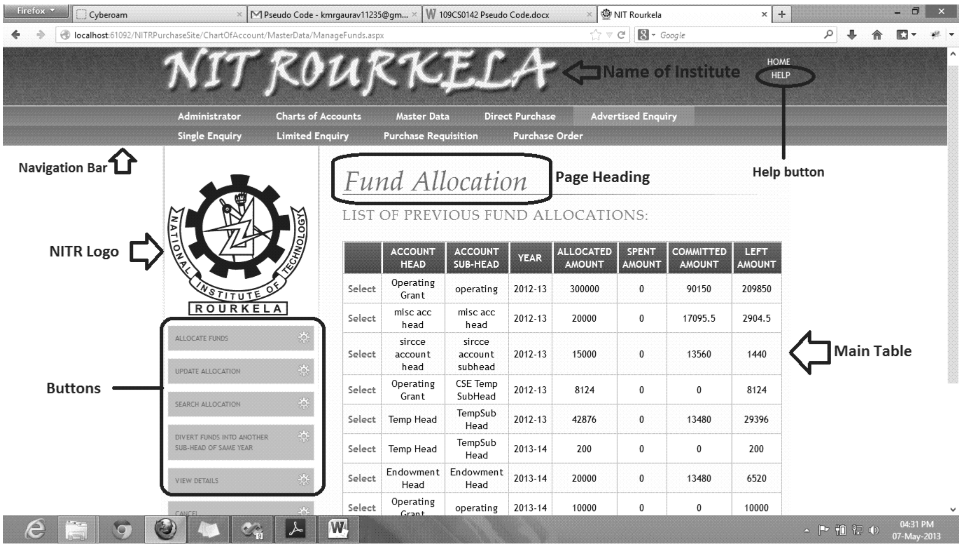


Figure 4.1: A typical page of Design

(iii) The Navigation Bar lies below it. It has hover-menu functionality, i.e. more menus appear when we move our mouse near it.

(iv) To the left, there is an NITR logo and the buttons (functionalities) for the page. The buttons are green initially but on hovering the mouse over them, they go white.

(v) To the right, there is Page Heading, Sub-heading and Main Table.

(vi) The alternating rows of main table are of different colour for better visual effects.

(vii) All the main tables have 'Select' buttons on the Left-most column using which a row of the table can be selected. The selected row is highlighted.

(viii) Almost all the main tables have the 'PageIndexChanging' functionality implemented in them. This functionality produces page numbers at the bottom of the table which can be used to view older data. The number of rows that can be viewed at a time is 10 or less.

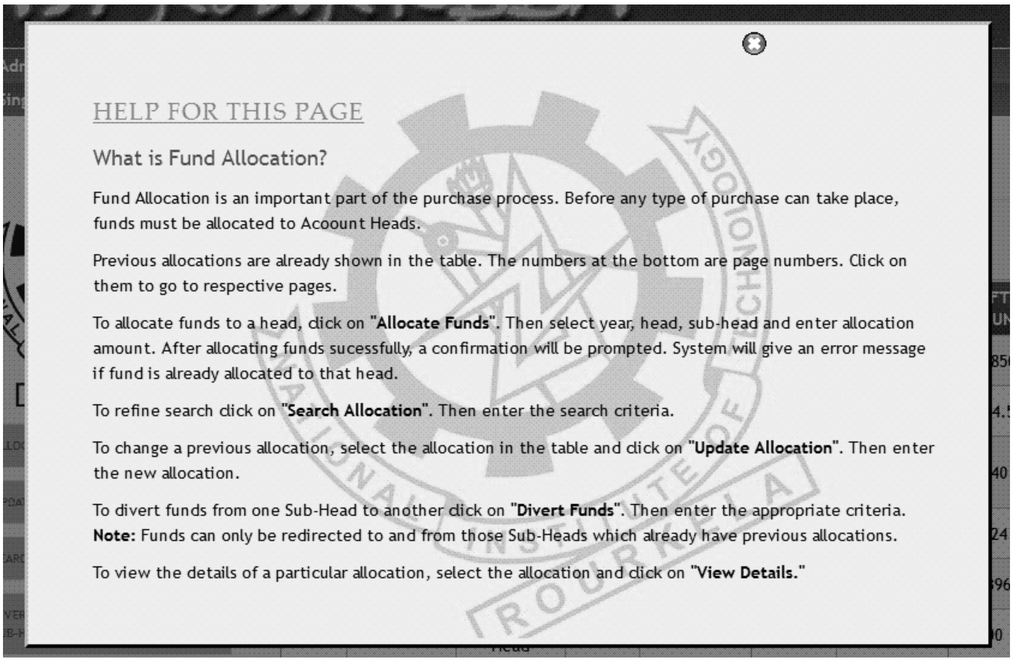


Figure 4.2: A Typical Help Pop-up

4.2 Snapshots

This section shows the implementation of the system through the snapshots of the application modules.

4.2.1 Manage Login

Login is the entry gate for the whole web application. This page (Fig. 4.3 on page 84) consists of two textboxes to be filled User Code and the Password. This page provides two functionalities

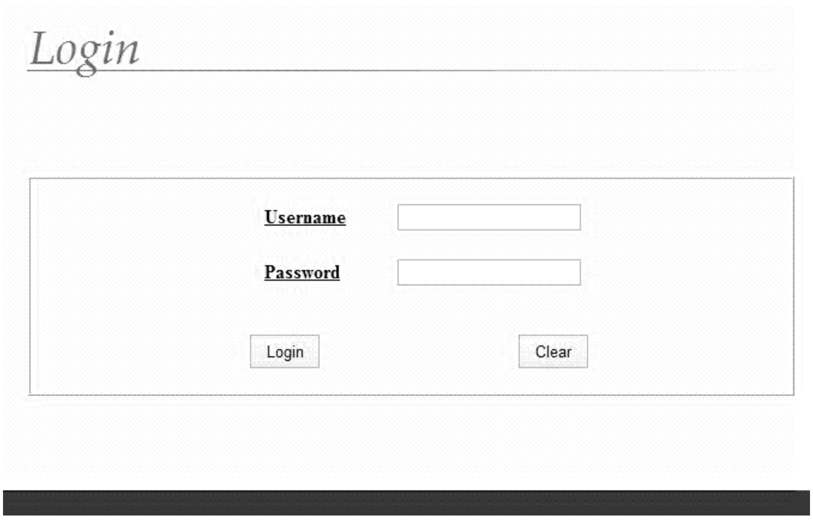


Figure 4.3: Login Page

(i) Login to the system.

(ii) Storing of User Code in the session variable.

The User Code stored in the session variable can be used at different pages to retrieve the ID of the users carrying out the process. There are two buttons on the Login Page: Login and Clear. Login is used for logging into the system while Clear Button is used for resetting the two fields.

In case wrong user code or password is entered, user will be prompted with the error as shown in Fig. 4.4 on page 85.

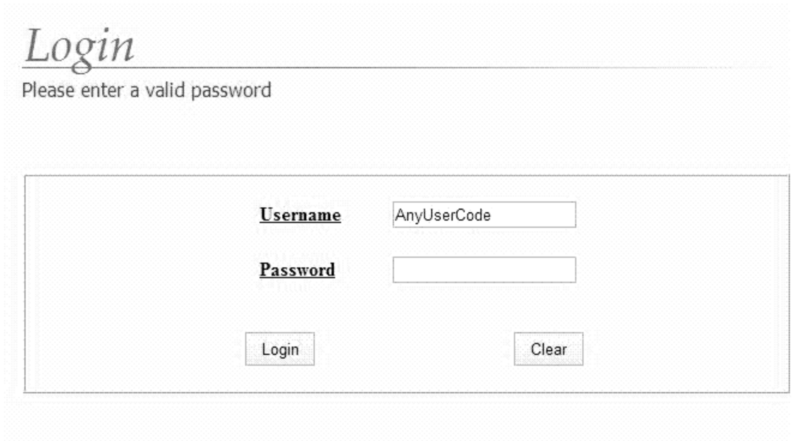


Figure 4.4: Login Page (When wrong user code is entered)

4.2.2 Manage Chart Of Accounts

4.2.2.1 Manage Account Category

Account Categories represent the different types of heads that can be created in our institute. In our institute basic Account Categories are: Plan, Non- Plan, Salary, IRG, Endowment, SRICCE and Miscellaneous.
And a special code is used to represent an Account Category:

<Short code>/<Account Category Number>/<Year>
(e.g. PE/2/2012)

This page(Fig. 4.5 on page 87) provides three functionalities:

(i) Create Account Category.

(ii) Update Account Category.

(iii) Search Account Category.

The table shows three important data about the Account Category: Code, Name and Description. Plus the select button provided helps the user to select a particular Account Category from the table.

4.2.2.1.1 Create Account Category.

This functionality is implemented with the help of a pop-up(Fig. 4.6 on page 88). The pop-up asks user for three data.

(i) Code

(ii) Name

(iii) Description

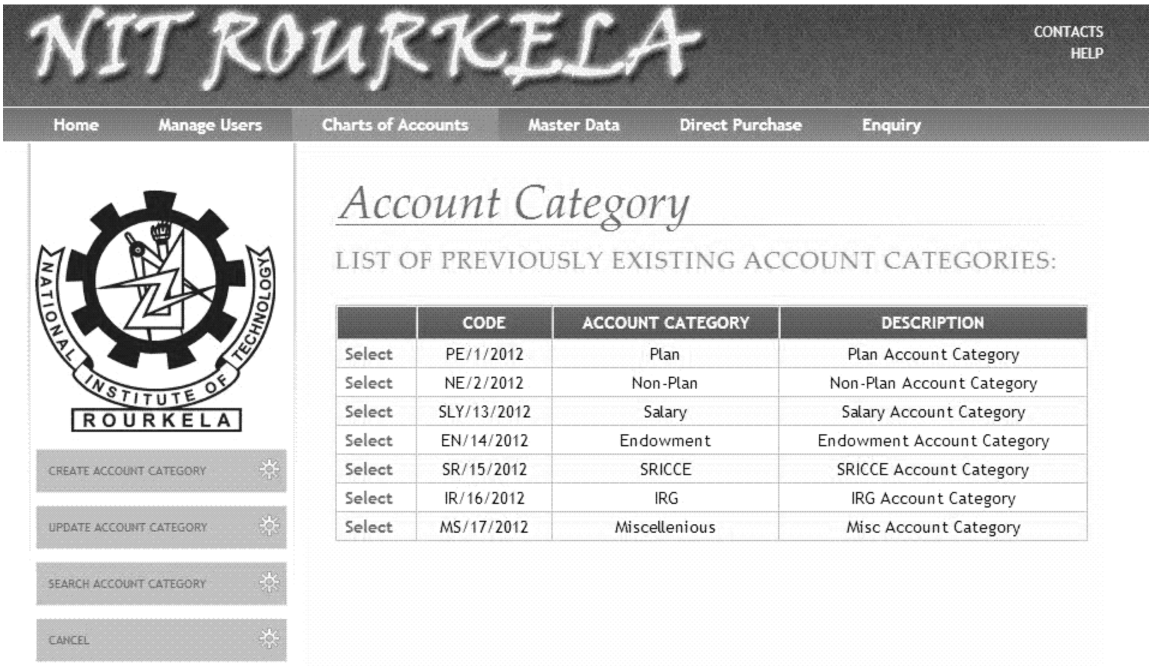


Figure 4.5: Account Category Page

In the code field, only the short code is required. Rest of the code is automatically generated by the system.

4.2.2.1.2 Update Account Category.

This functionality is also implemented with the help of a pop-up (Fig. 4.7 on page 88). A row is selected from the table and then Update button is pressed to open this pop-up. We can change the name or the description of the Account Category but not the code.

4.2.2.1.3 Search Account Category.

This functionality is also implemented with the help of a pop-up (Fig. 4.8 on page 89). When the Search button is pressed, a pop up will appear. User can give any of the three data or any combination of them to refine our search.

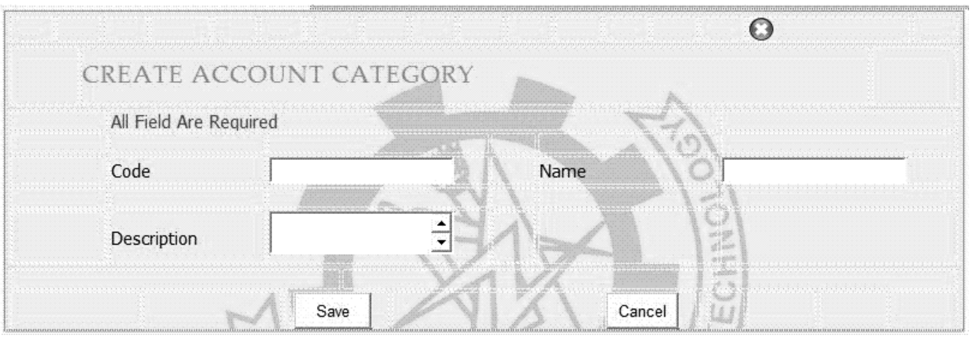


Figure 4.6: Account Category (Pop-up for creating an Account Category)

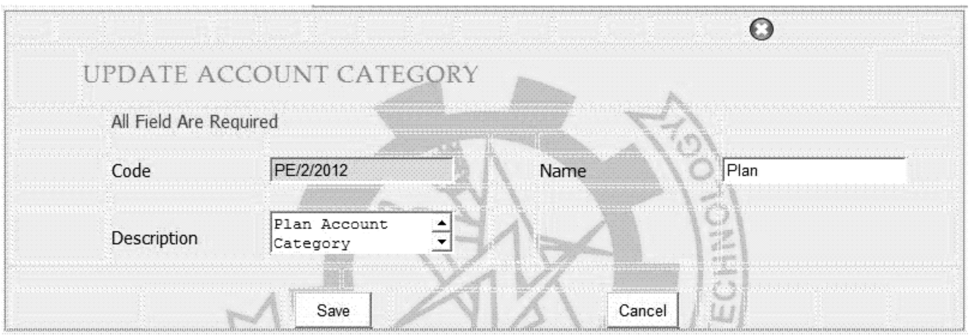


Figure 4.7: Account Category (Pop-up for updating an Account Category)

4.2.2.2 Manage Account Head

Account Heads represent the major heads that are available in our institute for the process of Purchase. Each head has some minor heads that are allocated some funds in the beginning of every financial year. Purchase of Goods and Services must be performed through appropriate heads.

Previous Account Head shown in the main table(Fig. 4.9 on page 89). The table shows the following information.

(i) Account Head Code

(ii) Account Head Name

(iii) Account Head Description

The page provides the following functionalities

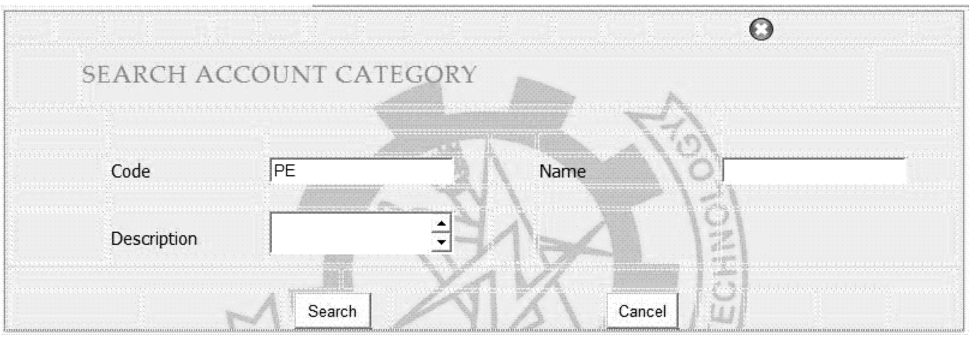


Figure 4.8: Account Category (Pop-up for searching an Account Category)

Figure 4.9: Account Head Main Page

(i) Add Account Head

(ii) Search Account Head

(iii) Update Account Head

(iv) Cancel

4.2.2.2.1 Add New Account Head

Clicking on Add Account Head button this pop-up(Fig. 4.10 on page 90). The user then needs to enter Account Category Name, Account Head Name, and Account Head Description. If the user fails to enter any of these or the allocation already exists, system displays an error message.

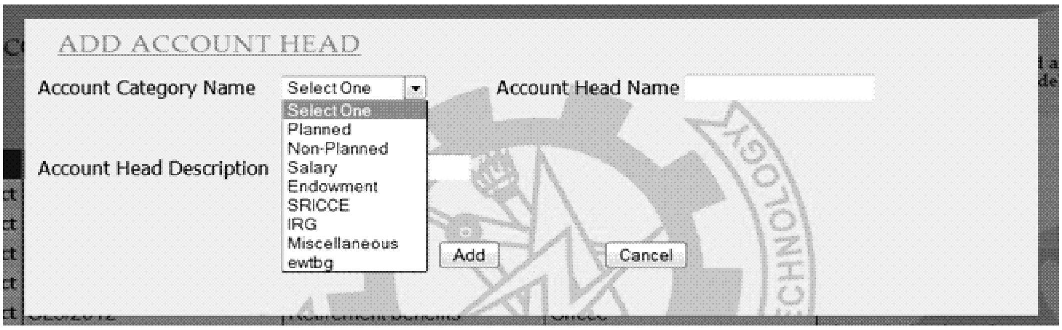


Figure 4.10: Account Head pop-up

4.2.2.2.2 Search New Account Head

To refine search click the "Search Account Head" button has to be clicked and the search criterion is to be entered(Fig. 4.11 on page 90). The System searches allocations according to this criterion. If no result satisfies the criterion, the system displays this as a message.

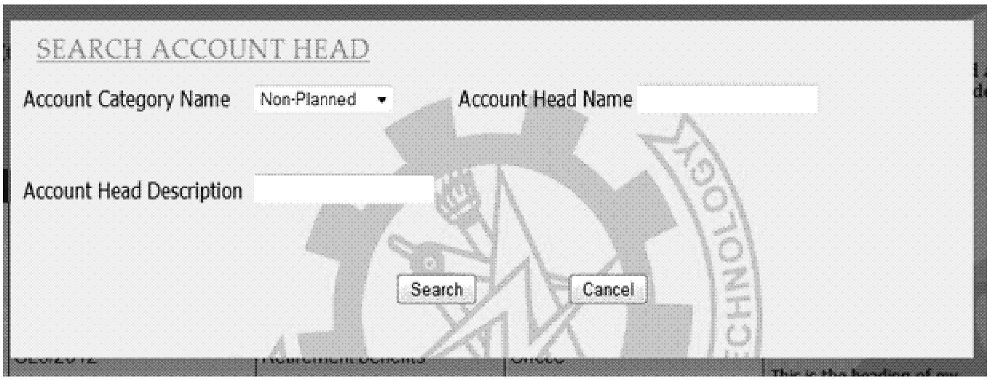


Figure 4.11: Account Head Search pop-up

4.2.2.2.3 Update New Account Head

To change previous Account Head information, select that particular raw in the table and the "Update Account Head" button has to be clicked. Then, the new head information is to be entered(Fig. 4.12 on page 91).

Figure 4.12: The Account Head update pop-up

4.2.2.3 Manage Account Sub-Head

Account Sub-Heads represent the minor heads that are avaliable in our institute for the process of Purchase.
And a special code is used to represent an Account Sub-Head:

This page(Fig. 4.13 on page 92) provides three functionalities:

(i) Create Account Sub-Head.

(ii) Update Account Sub-Head.

(iii) Search Account Sub-Head.

The table shows six important data about the Account Sub-Head: Code, Name and Description, Account Head Name, Responsible Authority and Approving Authority. Plus the select button provided helps the user to select a particular Account Sub-Head from the table.

4.2.2.3.1 **Create Account Sub-Head.**

This functionality is implemented with the help of a pop-up(Fig. 4.14 on page 93). The pop-up asks user for five data:

	ACCOUNT SUB-HEAD CODE	ACCOUNT SUB-HEAD NAME	ACCOUNT SUB-HEAD DESCRIPTION	ACCOUNT HEAD NAME	RESPONSIBLE AUTHORITY	APPROVING AUTHORITY
Select	PE2/11/2012	Plan Sub Head 1	Plan Sub Head 1	PlanHead	Prof. B. Majhi	Prof. B. Majhi
Select	PE11/9/2012	TempHeadName	TempHeadDesc	TempHeadName	Prof. B. Majhi	Prof. B. Majhi
Select	NE1/8/2012	operating		Operating Grant	Avin Goyal	Prof. A. K. Turuk
Select	IR10/7/2012	irg acc head	irg acc head	irg acc head	Prof. B. Majhi	Prof. B. Majhi
Select	MS9/6/2012	misc acc head	misc acc head	misc acc head	Prof. B. Majhi	Prof. B. Majhi
Select	SLY8/5/2012	Salary account	dlsnv	Salary account	Prof. B. Majhi	Prof. B. Majhi
Select	IR7/4/2012	Irg account hrad	geogh	Irg account hrad	Prof. B. Majhi	Prof. B. Majhi
Select	SR6/3/2012	sircce account subhead		sircce account head	Prof. B. Majhi	Prof. A. K. Turuk

Figure 4.13: Account Sub-Head Page

(i) Account Head Name

(ii) Account Sub-Head Name

(iii) Account Sub-Head Description

(iv) Responsible Authority

(v) Approving Authority

All data fields are requied to be filled.

4.2.2.3.2 **Update Account Sub-Head.**

This functionality is also implemented with the help of a pop-up (Fig. 4.15 on page 93). A row is selected from the table and then Update button is pressed to open this pop-up. We can change all the information of the Account Sub-Head.

4.2.2.3.3 **Search Account Sub-Head.**

This functionality is also implemented with the help of a pop-up (Fig. 4.16 on

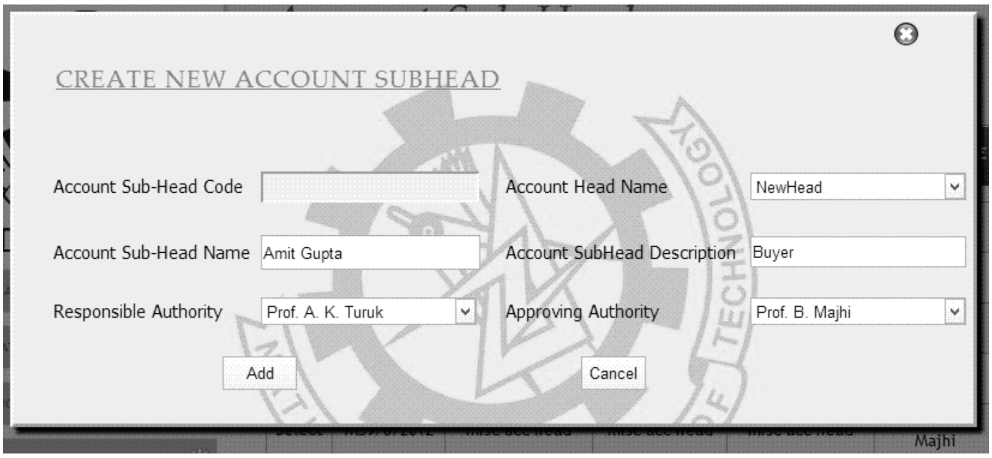


Figure 4.14: Account Sub-Head (Pop-up for creating an Account Sub-Head)

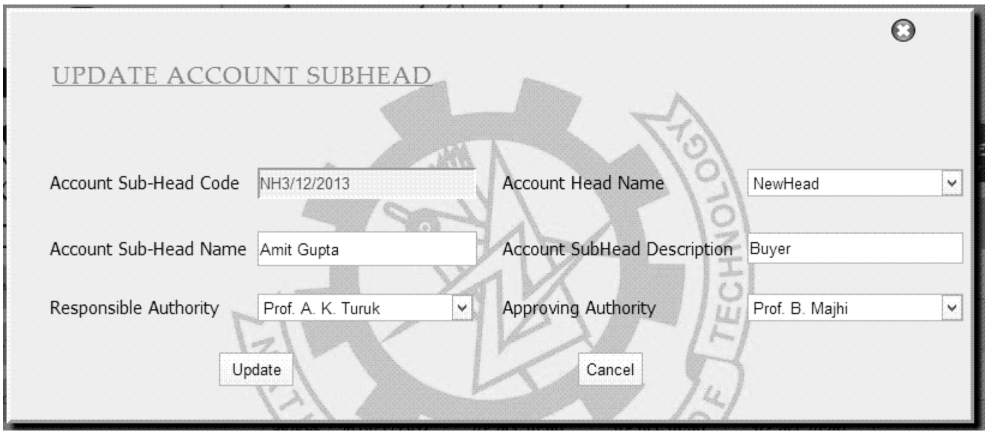


Figure 4.15: Account Sub-Head (Pop-up for updating an Account Sub-Head)

page 94). When the Search button is pressed, a pop up will appear. User can give any of the three data or any combination of them to refine our search.

4.2.2.4 Manage Fund Allocation

Fund Allocation is an important part of the purchase process. Before any type of purchase can take place, funds must be allocated to Account Heads. Funds are allocated to Sub-heads for particular year. These funds can then be spent in purchase process.

Previous Allocations are shown in the main table. It includes the following

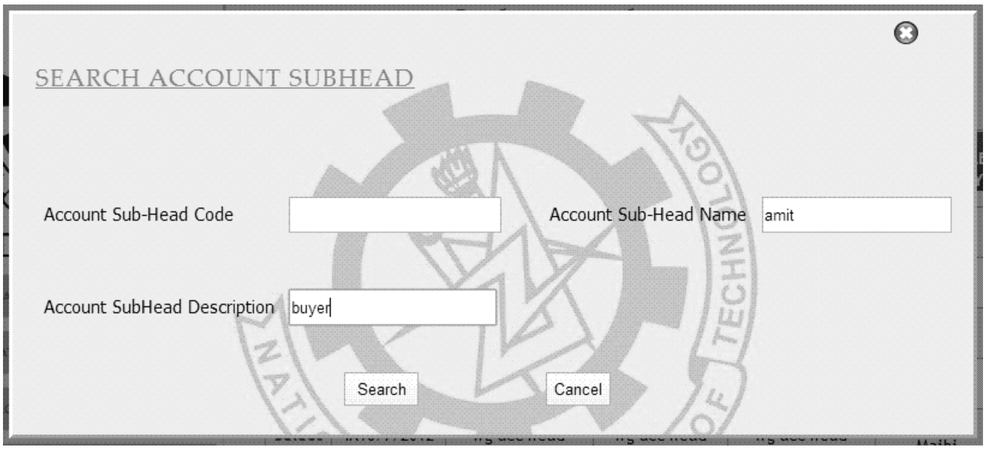


Figure 4.16: Account Sub-Head (Pop-up for searching an Account Sub-Head)

details:

(i) Account Head

(ii) Account Sub-Head

(iii) Year

(iv) Allocated amount

(v) Spent Amount

(vi) Committed Amount

(vii) Left Amount

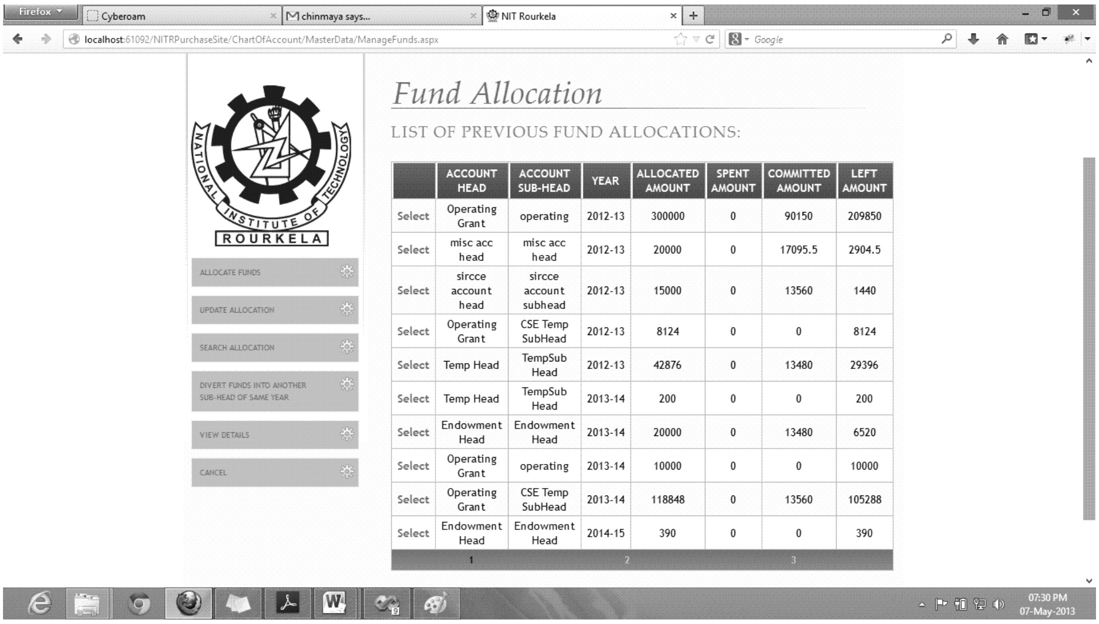
The page(Fig. 4.17 on page 95) provides the following functionalities:

(i) Allocate Funds

(ii) Search Allocation

(iii) Update Allocation

(iv) Divert Funds



	ACCOUNT HEAD	ACCOUNT SUB-HEAD	YEAR	ALLOCATED AMOUNT	SPENT AMOUNT	COMMITTED AMOUNT	LEFT AMOUNT
Select	Operating Grant	operating	2012-13	300000	0	90150	209850
Select	misc acc head	misc acc head	2012-13	20000	0	17095.5	2904.5
Select	sircce account head	sircce account subhead	2012-13	15000	0	13560	1440
Select	Operating Grant	CSE Temp SubHead	2012-13	8124	0	0	8124
Select	Temp Head	TempSub Head	2012-13	42876	0	13480	29396
Select	Temp Head	TempSub Head	2013-14	200	0	0	200
Select	Endowment Head	Endowment Head	2013-14	20000	0	13480	6520
Select	Operating Grant	operating	2013-14	10000	0	0	10000
Select	Operating Grant	CSE Temp SubHead	2013-14	118848	0	13560	105288
Select	Endowment Head	Endowment Head	2014-15	390	0	0	390

Figure 4.17: The Fund Allocation Page

(v) View Fund Details

4.2.2.4.1 Allocate Funds

Clicking the "Allocate Funds" button opens this pop-up. The user then needs to enter the Year, Account Head, Account Sub-head and Allocated Amount. If the user fails to enter any of these or the allocation already exists, system displays an error message (Fig. 4.18 on page 96).

4.2.2.4.2 Search Funds

To refine search click the "Search Allocation" button has to be clicked and the search criterion is to be entered. The System searches allocations according to this criterion. If no result satisfies the criterion, the system displays this as a message. (Fig. 4.19 on page 96).

4.2.2.4.3 Update Funds

To change a previous allocation, the allocation is selected in the table and the "Update Allocation" button is clicked. Then, the new allocation is to be entered. Here, the New Allocation must be greater than or equal to the sum of amount already

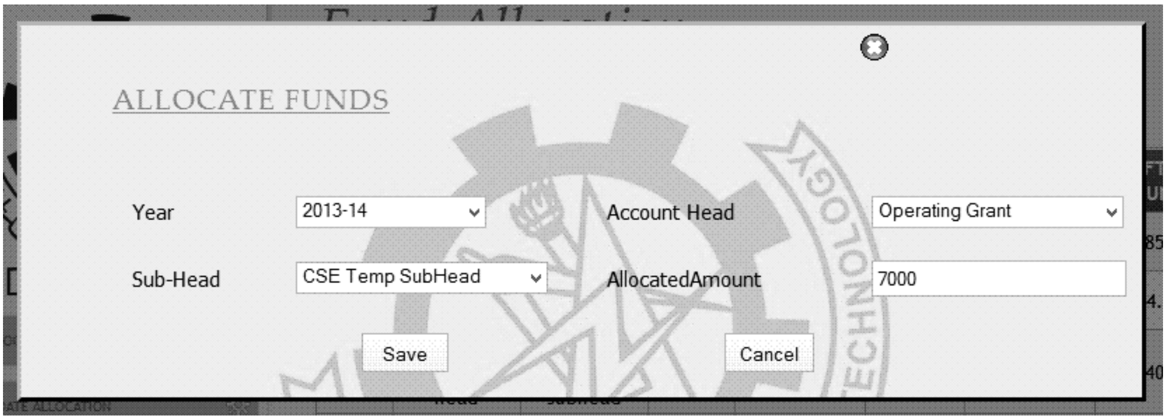


Figure 4.18: The add pop-up of fund allocation

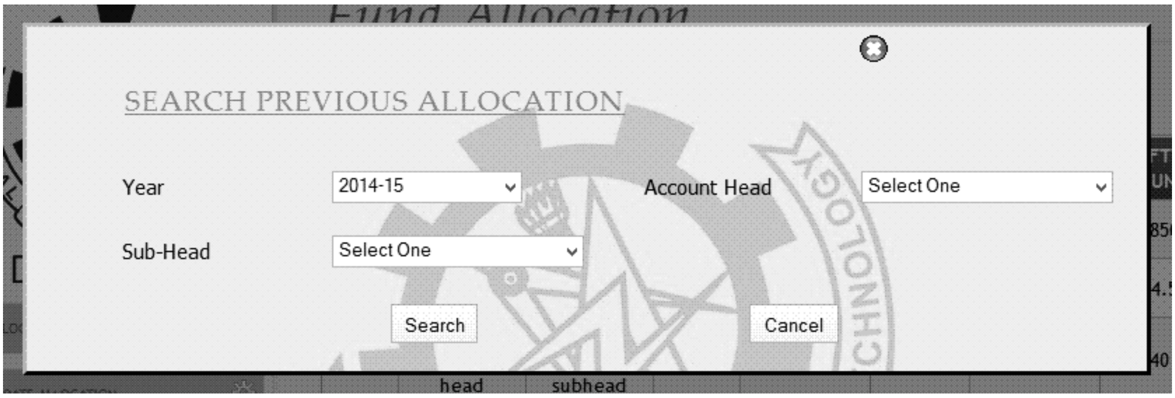


Figure 4.19: The search pop-up

committed and spent, otherwise the System will give an error message. (Fig. 4.20 on page 97).

4.2.2.4.4 Divert Funds

Funds can be diverted from one sub-head to another in a year. Clicking the “Divert Funds into another Sub-Head of same Year” opens the Divert Funds pop-up. (Fig. 4.21 on page 98).

4.2.2.4.5 View Fund Details

Selecting a row from the main table and clicking the “View Fund Details” button takes us to the Fund Details page where the details of how money was allocated and spent for that allocation is shown. (Fig. 4.22 on page 99).

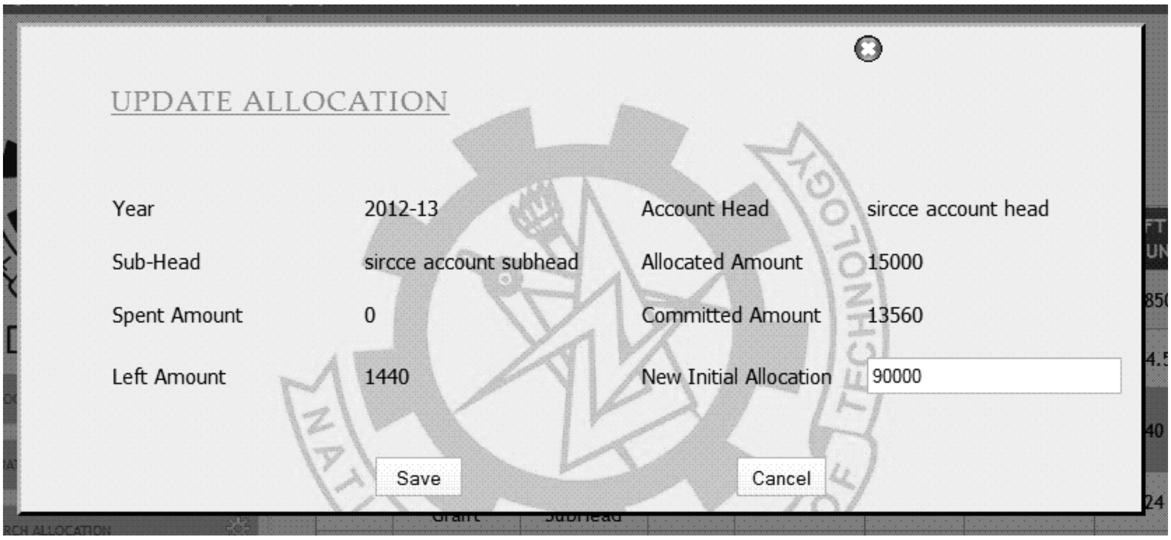


Figure 4.20: The update pop-up

4.2.2.4.6 Print Fund Details

Clicking this button in the Fund Details page prints the details of the allocation. (Fig. 4.23 on page 100).

4.2.2.5 Manage Goods And Services

Goods and Service include all articles, commodities, materials, spares, instruments, machinery, equipment, industrial plant, books, software, licences etc. Frequently purchasing of any Goods and Service placed in Primary Goods and Service table, for first time purchasing of any Goods and service placed in Secondary Goods and Service. If item in Secondary Goods and service table purchased frequently that particular item must shifted from Secondary Goods and service table to Primary Goods and Service table. Previous Primary and Secondary Goods and Service shown in the main table(Fig. 4.24 on page 101). The table shows the following information.

(i) Item Name

(ii) Item Code

(iii) Item Type

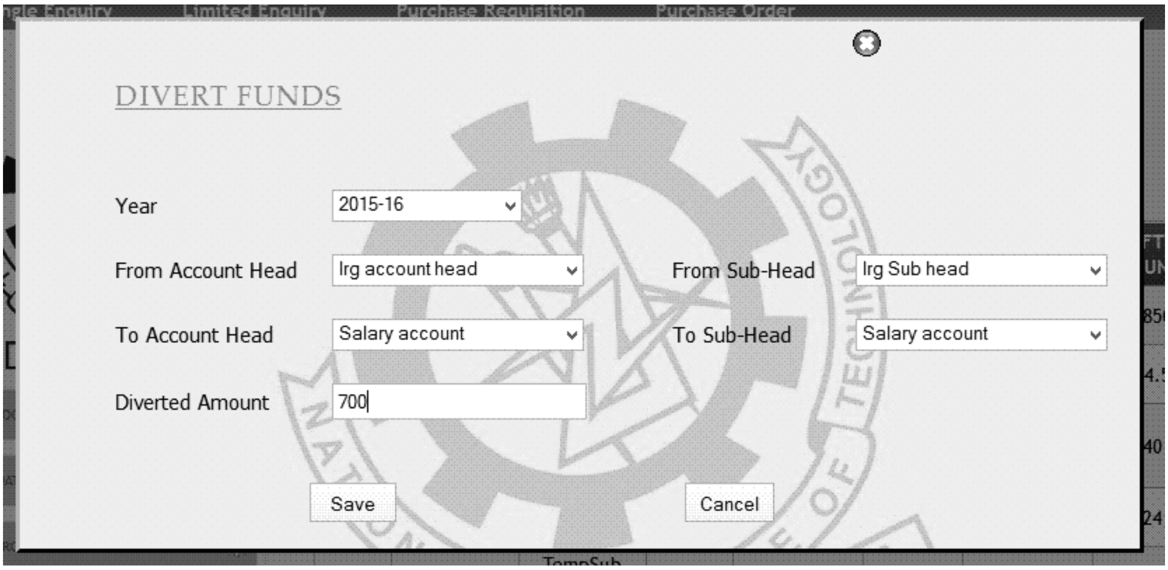


Figure 4.21: The Divert Funds Pop-up

(iv) Measurement Unit

(v) Excise Duty

The page provides the following functionalities

(i) Add Primary

(ii) Add Secondary

(iii) Secondary To Primary

(iv) Search

(v) Modify

(vi) Cancel

4.2.2.5.1 Add New Goods and Service

4.2.2.5.1.1 Add Primary Goods and Service

Clicking on Add Primary button this pop-up. The user then needs to enter Item Name, Item Type, Measurement Unit, and Excise Duty(Fig. 4.25 on

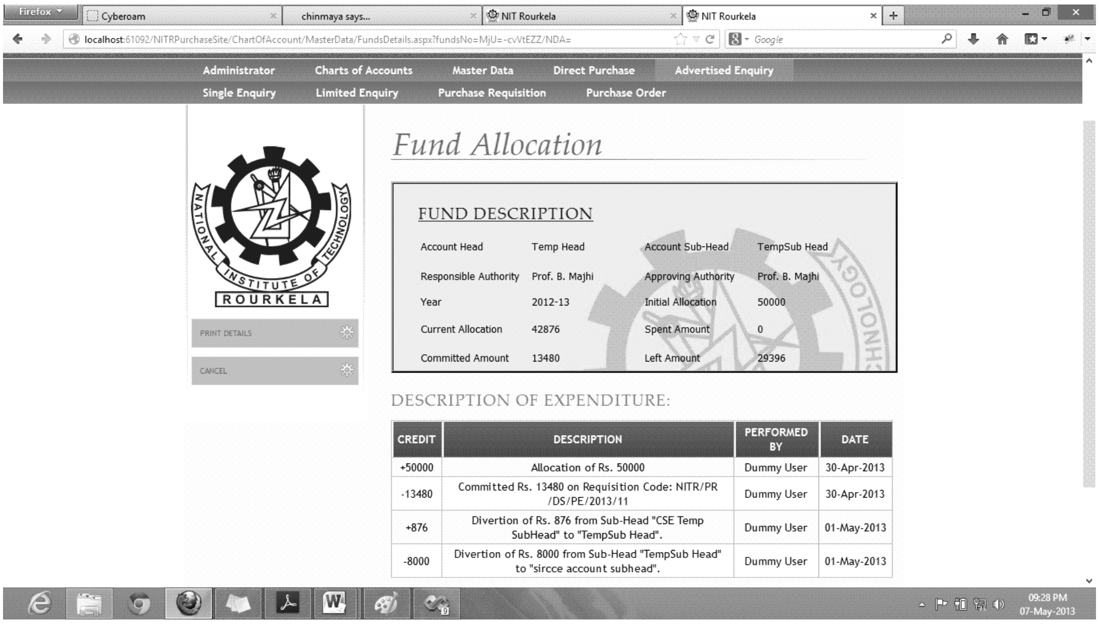


Figure 4.22: Fund Details Page

page 101). If the user fails to enter any of these or the allocation already exists, system displays an error message.

4.2.2.5.1.2 Add Secondary Goods and Service

Clicking on Add Primary button this pop-up. The user then needs to enter Item Name, Item Type, Measurement Unit, and Excise Duty(Fig. 4.26 on page 102). If the user fails to enter any of these or the allocation already exists, system displays an error message.

4.2.2.5.1.3 Add To Primary From Secondary Goods and Service

To change Goods and Services information from Secondary to Primary table. Select a row from Secondary Goods and Service table and click "Secondary to Primary".(Fig. 4.27 on page 102 and Fig. 4.28 on page 103).

4.2.2.5.2 Search Goods and Service

To refine search click the "Search" button has to be clicked and the search criterion is to be entered. The System searches allocations according to this criterion (Fig. 4.29 on page 103). If no result satisfies the criterion, the system displays this

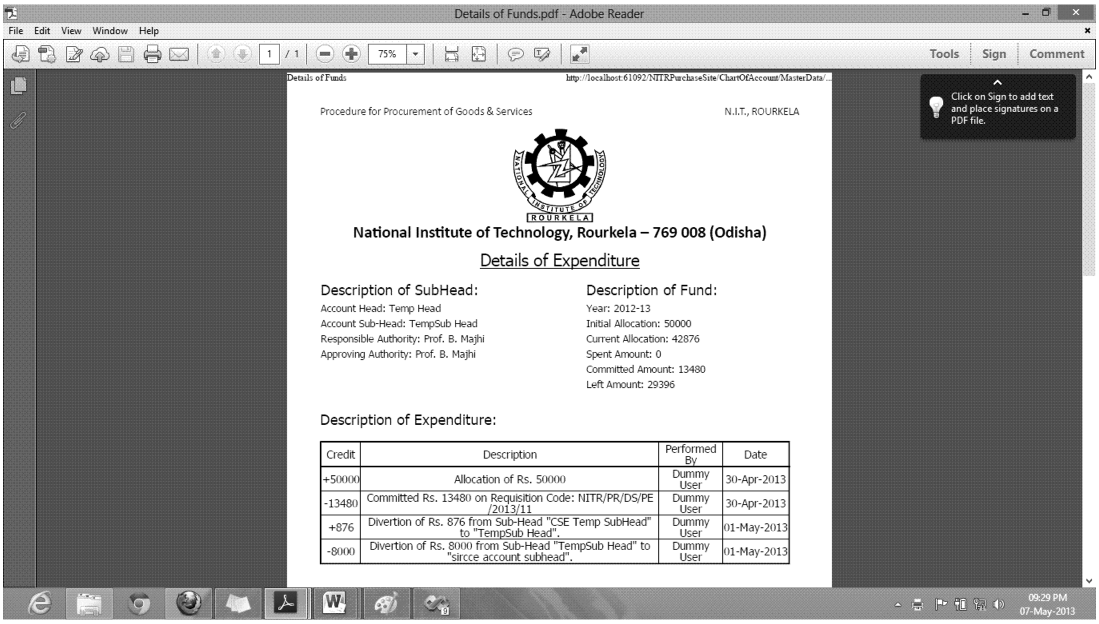


Figure 4.23: Fund Details printed in a pdf document

as a message.

4.2.2.5.3 Update Goods and Service

To change previous Primary/Secondary Goods and Service information, select that particular raw in the table and the "Modify" button has to be clicked. Then, the new head information is to be entered(Fig. 4.30 on page 104).

4.2.2.6 Manage Supplier

Supplier represent the list of vendors who supply Goods/Services.
And a special code is used to represent an Supplier:

This page(Fig. 4.31 on page 105) provides three functionalities:

(i) Add Supplier.

(ii) Update Supplier.

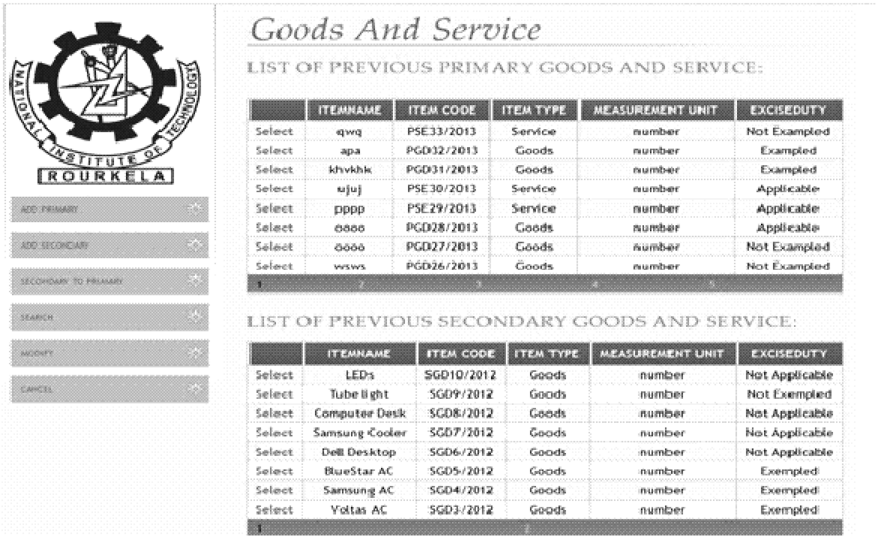


Figure 4.24: Goods And Service Main Page

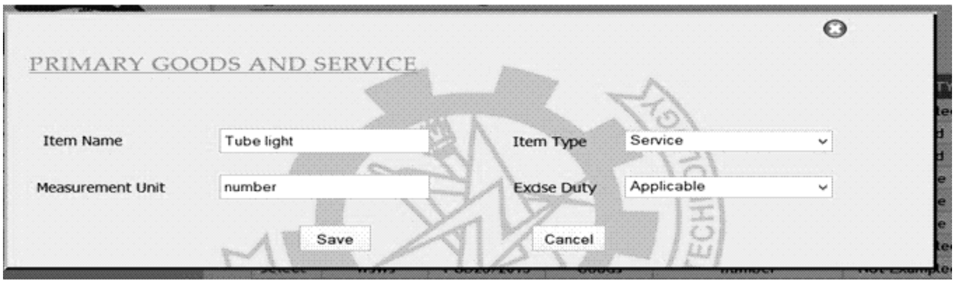


Figure 4.25: Primary Goods and Service pop-up

(iii) Search Supplier.

The table shows six important data about the Supplier Code, Firm Name, Description, State, Country and Contact Person. Plus the select button provided helps the user to select a particular Supplier from the table.

4.2.2.6.1 **Add Supplier**

This functionality is implemented with the help of a pop-up(Fig. 4.32 on page 105). The pop-up asks user for five data:

(i) Firm Name

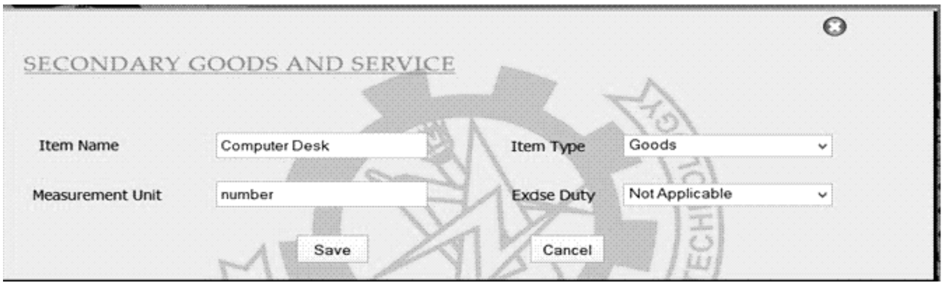
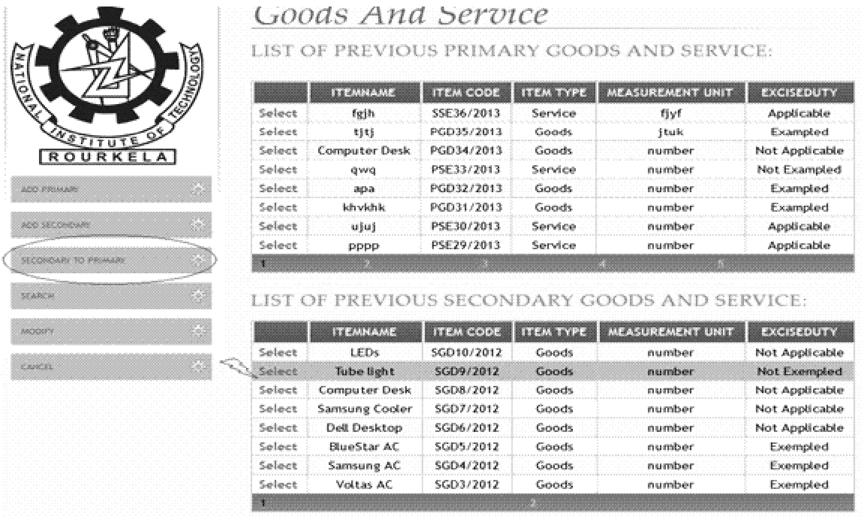


Figure 4.26: Secondary Goods and Service pop-up



	ITEMNAME	ITEM CODE	ITEM TYPE	MEASUREMENT UNIT	EXCISEDUTY
Select	fgjh	SSE36/2013	Service	fjyf	Applicable
Select	tjtj	PGD35/2013	Goods	jtuk	Exampled
Select	Computer Desk	PGD34/2013	Goods	number	Not Applicable
Select	qwq	PSE33/2013	Service	number	Not Exampled
Select	apa	PGD32/2013	Goods	number	Exampled
Select	khvkhk	PGD31/2013	Goods	number	Exampled
Select	ujuj	PSE30/2013	Service	number	Applicable
Select	pppp	PSE29/2013	Service	number	Applicable

	ITEMNAME	ITEM CODE	ITEM TYPE	MEASUREMENT UNIT	EXCISEDUTY
Select	LEDs	SGD10/2012	Goods	number	Not Applicable
Select	Tube light	SGD9/2012	Goods	number	Not Exempted
Select	Computer Desk	SGD8/2012	Goods	number	Not Applicable
Select	Samsung Cooler	SGD7/2012	Goods	number	Not Applicable
Select	Dell Desktop	SGD6/2012	Goods	number	Not Applicable
Select	BlueStar AC	SGD5/2012	Goods	number	Exempted
Select	Samsung AC	SGD4/2012	Goods	number	Exempted
Select	Voltas AC	SGD3/2012	Goods	number	Exempted

Figure 4.27: Changing information from secondary to primary table

(ii) Address

(iii) Contact Person

(iv) Designation

(v) Phone Number

(vi) Fax Number

(vi) Email

(vii) Pin Number

(viii) Tin Number

(ix) Maximum order Size

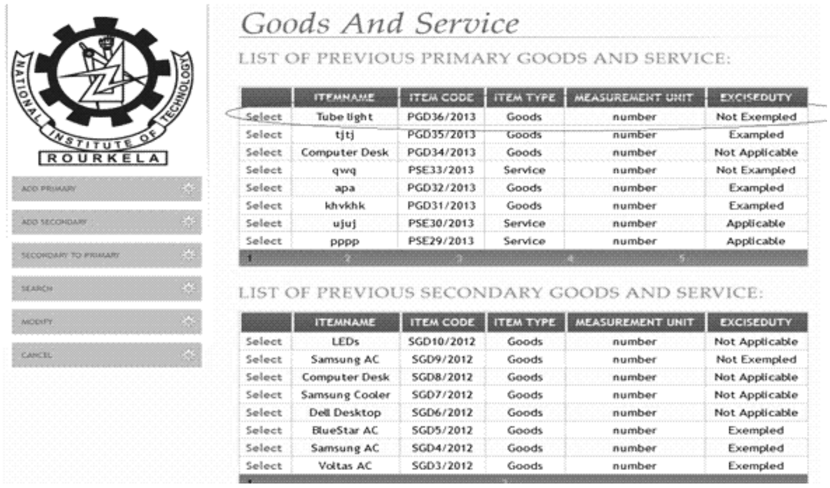


Figure 4.28: Result of Changing information from secondary to primary table

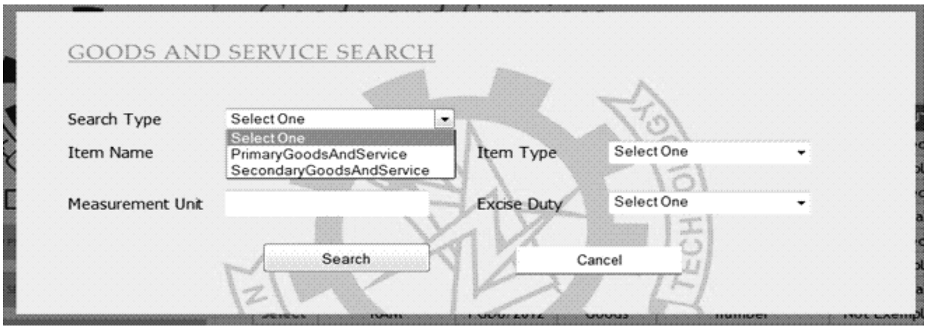


Figure 4.29: Goods And Service Search Pop-up

(x) Supplier Description

All data fields are requied to be filled.

4.2.2.6.2 **Update Supplier.**

This functionality is also implemented with the help of a pop-up (Fig. 4.33 on page 106). A row is selected from the table and then Update button is pressed to open this pop-up. We can change all the information of the Supplier.

4.2.2.6.3 **Search Supplier.**

This functionality is also implemented with the help of a pop-up (Fig. 4.34on

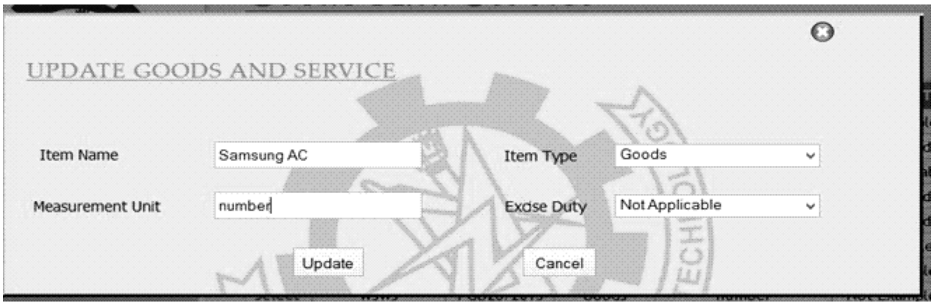


Figure 4.30: Goods And Service Update Pop-up

page 106). When the Search button is pressed, a pop up will appear. User can give any of the three data or any combination of them to refine our search.

Figure 4.31: Supplier Page

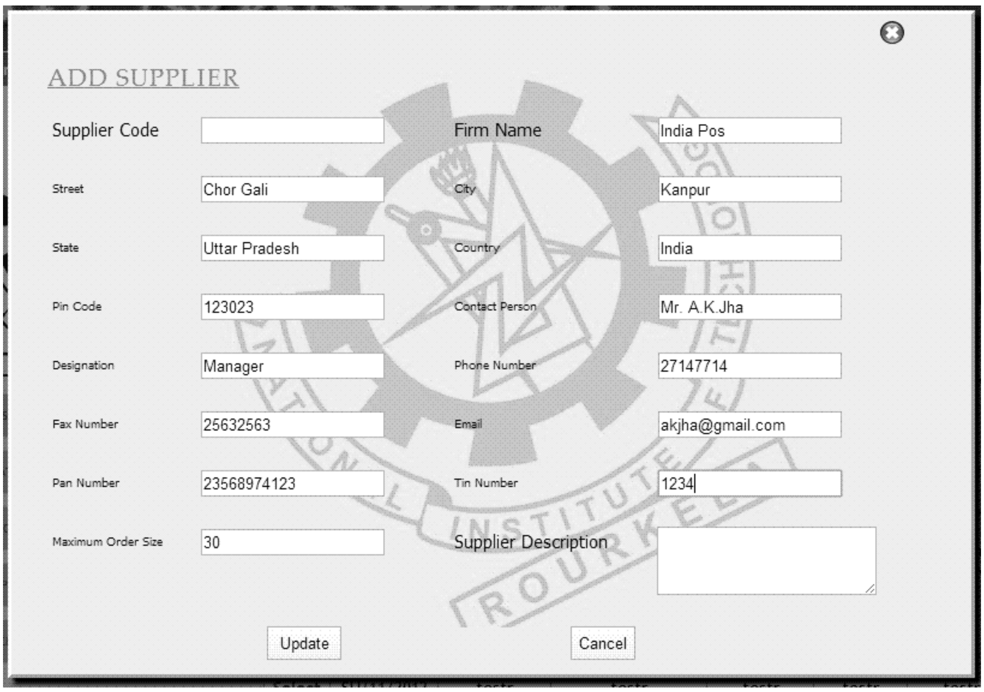


Figure 4.32: Supplier (Pop-up for Adding an Supplier)

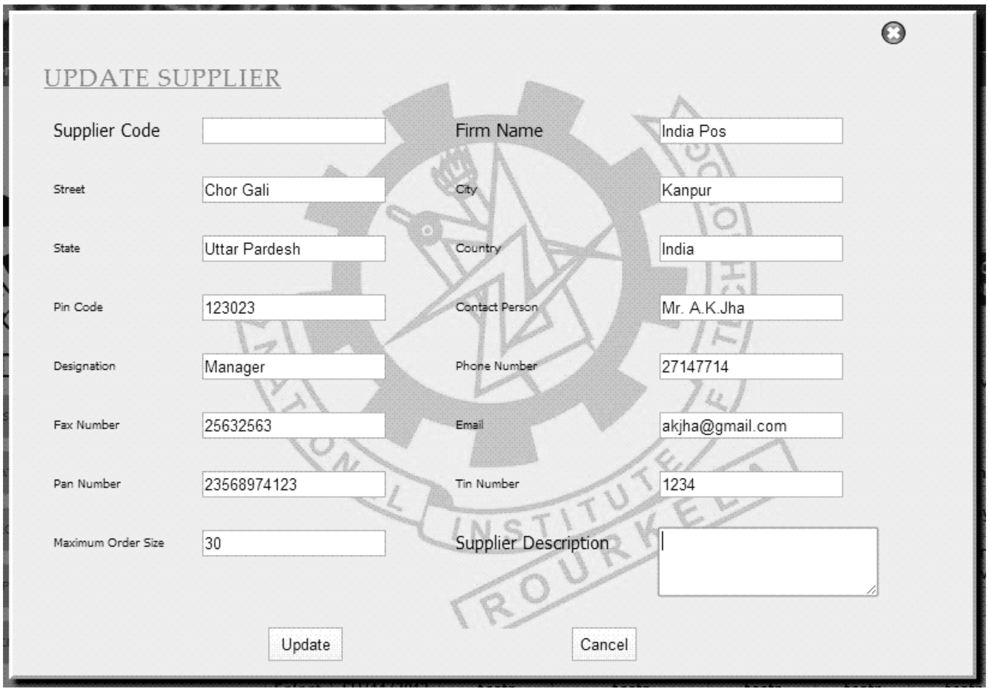


Figure 4.33: Supplier (Pop-up for updating an Supplier)

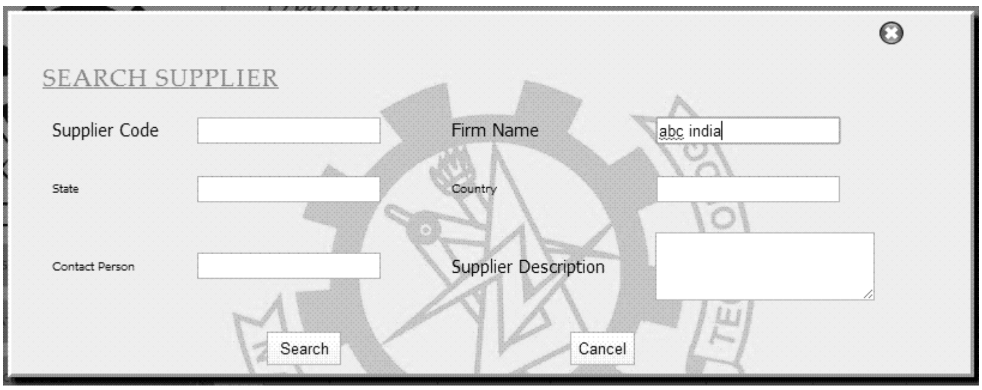


Figure 4.34: Supplier (Pop-up for searching an Suplier)

4.2.3 Manage Direct Purchase

Direct Purchase is a kind of purchase that includes purchases of goods that do not require inviting quotations or bids on the basis of a certificate to be recorded by the HOD/HOC/PI/Registrar. The main page of Direct Purchase is as shown in Fig. 4.35 on page 107

Figure 4.35: Direct Purchse (Main Page)

Rather these can be done directly. Multiple goods/services can be selected and for each one of these only one supplier can be selected. Steps involved in Directed Purchase Process

(i) Initiate Direct Purchase.

(ii) Select items to be purchased.

(iii) Wait for HOD Approval.

(iv) Select suppliers for the items selected.

(v) Again wait for the HOD Approval.

(vi) Wait for Finance Officer Approval.

(vii) Wait for Registrar Approval.

4.2.3.1 Initiate Direct Purchase.

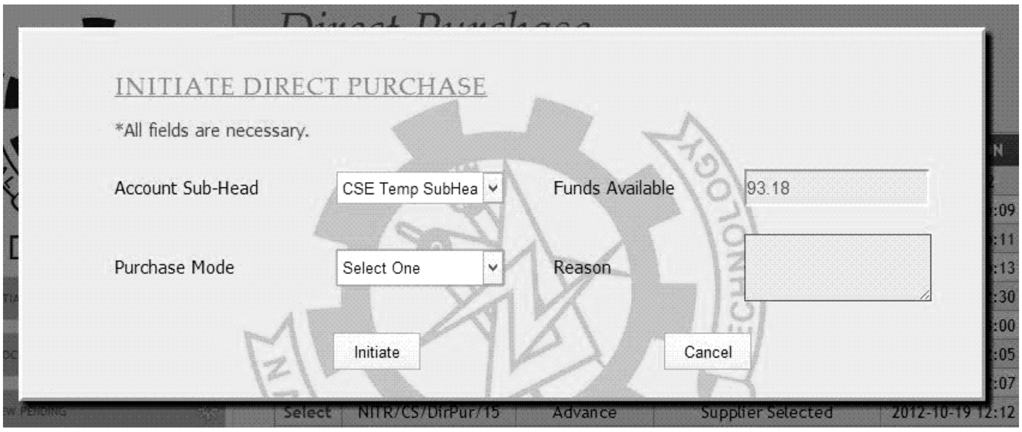


Figure 4.36: Direct Purchase (Pop-up for initiating a direct purchase)

This functionality is implemented with the help of a pop-up (Fig. 4.36 on page 108 and Fig. 4.37 on page 109). It asks users for some information: Subhead and the purchase mode (along with a reason).

4.2.3.2 Direct Purchase Item Selection

This page(Fig. 4.38 on page 110) allows users to select the items to be purchased. It contains a panel that shows the details of the direct purchase for which the items are being selected.

This is the panel(Fig. 4.39 on page 110) that shows the details of the direct purchase for which the items are being selected.


Direct Purchase

LIST OF PREVIOUS DIRECT PURCHASES:

	CODE	TYPE	STATUS	CREATED ON
Select	NITR/CS/DirPur/27	Advance	Initiated (Waiting)	2012-12-19 15:31
Select	NITR/CS/DirPur/28	Imprest Mode	Initiated (Waiting)	2013-05-03 15:00
Select	NITR/CS/DirPur/29	Advance	Initiated but not complete	2013-05-03 22:52
1		2	3	

Figure 4.37: Direct Purchase (Status after it has been initiated)

This area of the page(Fig. 4.40 on page 111) allows the user to search for the particular items from the database to refine the data in the table.

The checkbox Show Pre-Existing allows users to look and modify the already selected items(Fig. 4.41 on page 111).

This snapshot(Fig. 4.42 on page 112) show the error that is generated in case the quantity or the unit price filled is not in the correct format.

When we click Proceed Button, a pop-up(Fig. 4.43 on page 112) will appear that will ask user for some additional details:

4.2.3.3 Direct Purchase Supplier Selection

This page allows users to select the suppliers for the items to be purchased (Fig. 4.44 on page 113). Most of the functionalities shown are similar to that of Item Selection page.

If a supplier has been selected for a particular item, then a message also appears on the top indicating the successful addition of the supplier for the item (Fig. 4.45 on page 113).

Show Selected checkbox allows user to look at and modify the previously selected suppliers for the items (Fig. 4.46 on page 114).

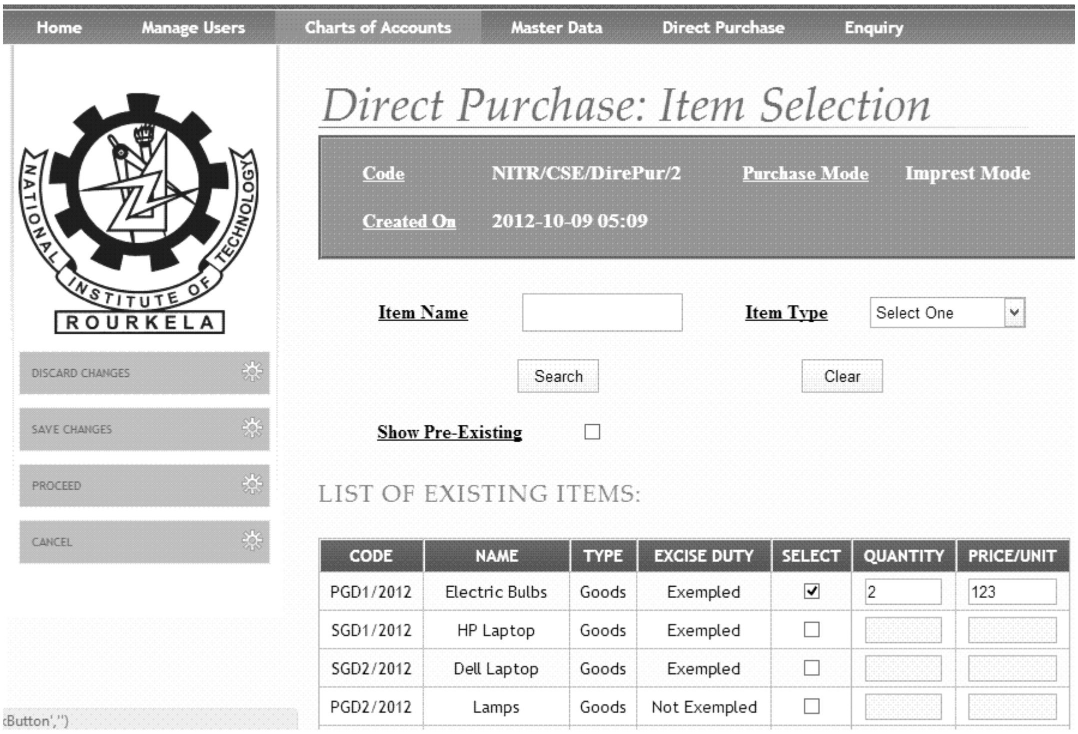


Figure 4.38: Direct Purchase (Item Selection)

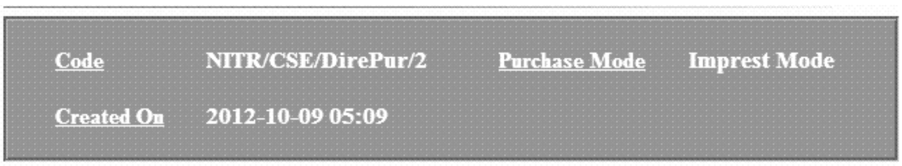


Figure 4.39: Details of the Direct Purchase being handled.

4.2.3.4 Direct Purchase Bill Details

This page (Fig. 4.47 on page 114) allows users to fill in the bill details of the items purchased. Bill details filled include Bill Number and the Bill Date.

Whenever a user wants to look at the details of the item purchased, he/she can click on the View Details button of the side panel after selecting a row from the table. A pop up will appear for the same (Fig. 4.48 on page 115).

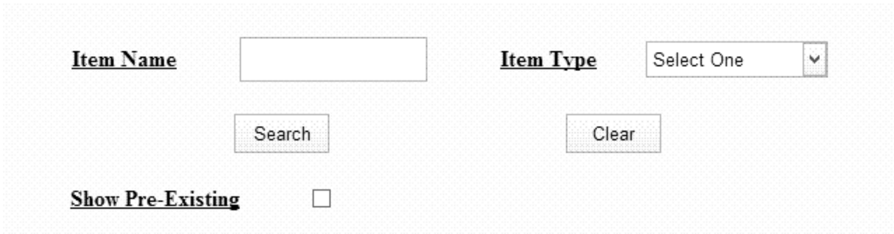


Figure 4.40: Options to refine the item list through a search.

Figure 4.41: Option to get to the pre-existing items directly.

4.2.3.5 Pending Direct Purchase

This page is for approving the pending Direct Purchases. The designated authorities can use this page to go through pending Direct Purchases and approve the same (Fig. 4.49 on page 115).

This page also provides the functionality to search for a particular direct purchase (Fig. 4.50 on page 116). In this way it becomes easy to go through the list of pending direct purchases.

Date Initiated is disabled because a calendar pop-up is used for selecting the date for the same (Fig. 4.51 on page 116).

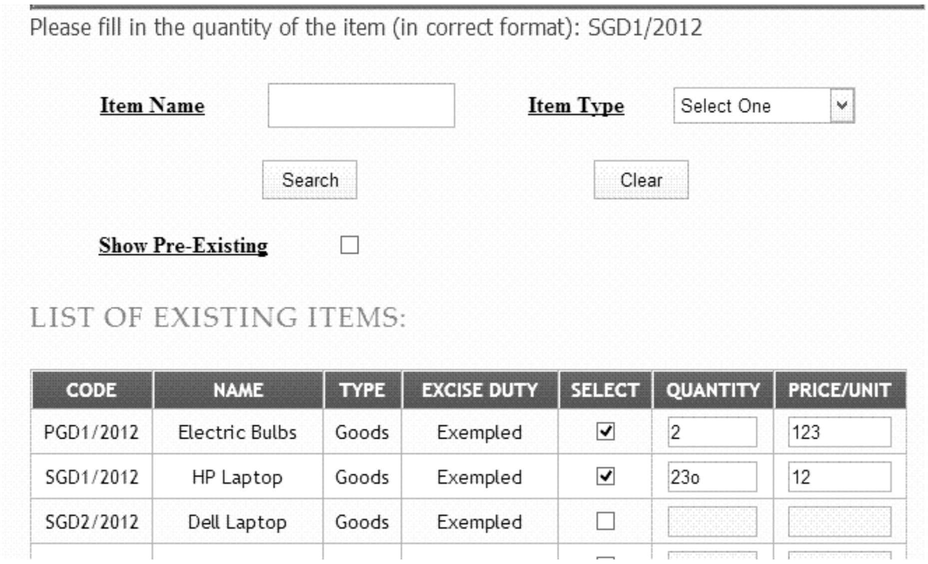


Figure 4.42: Error on filling the quantity or the unit price not in correct format.

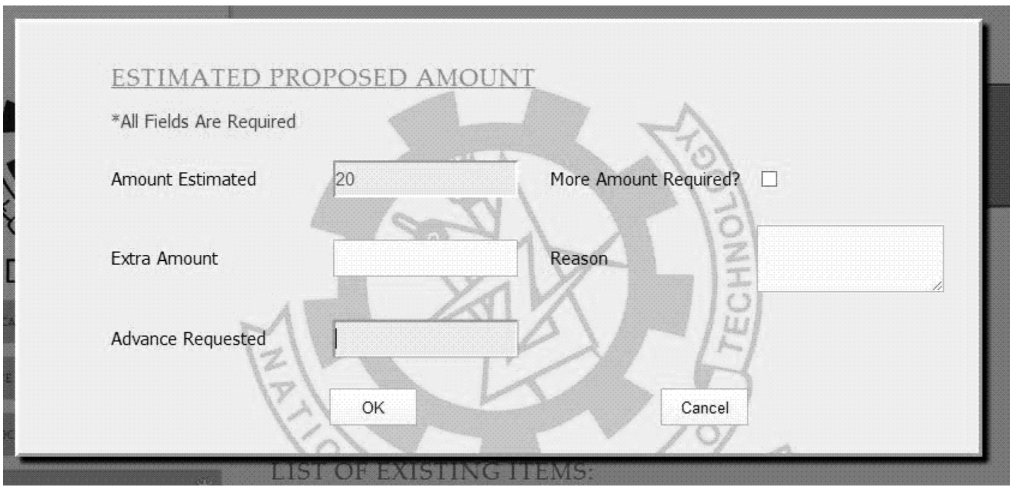


Figure 4.43: Pop up after the items has been selected (Additional amount required or the advance taken).

Figure 4.44: Supplier Selection page for the Direct Purchase.

Figure 4.45: After addition of the supplier for a item.

Figure 4.46: On clicking Show Selected checkbox.

Figure 4.47: Page for filling in the bill details of the items purchased.

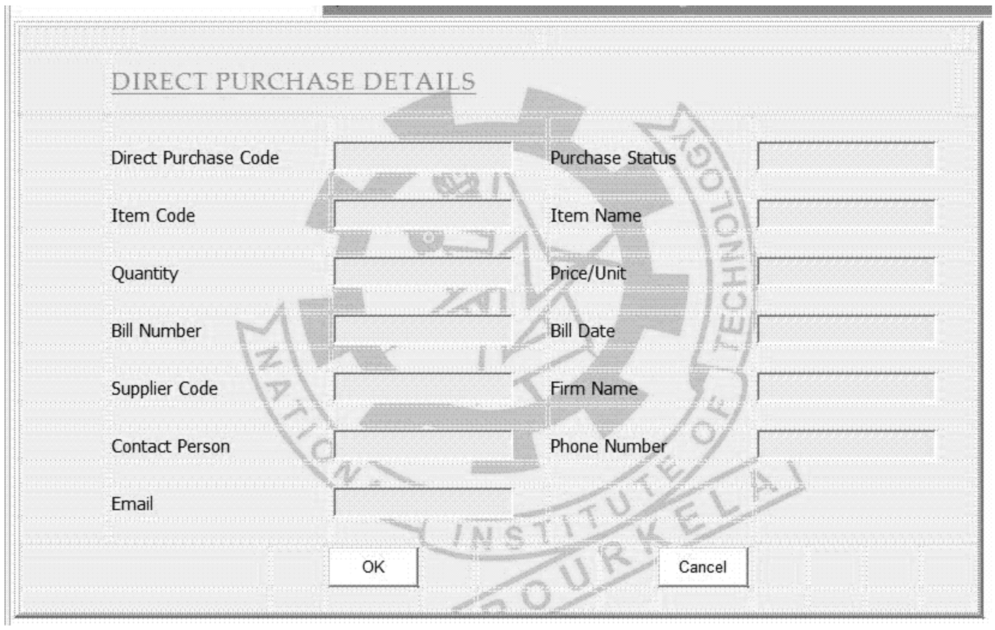


Figure 4.48: Purchase details of an item under a Direct Purchase.

Figure 4.49: Pending Direct Purchases (Main Page).

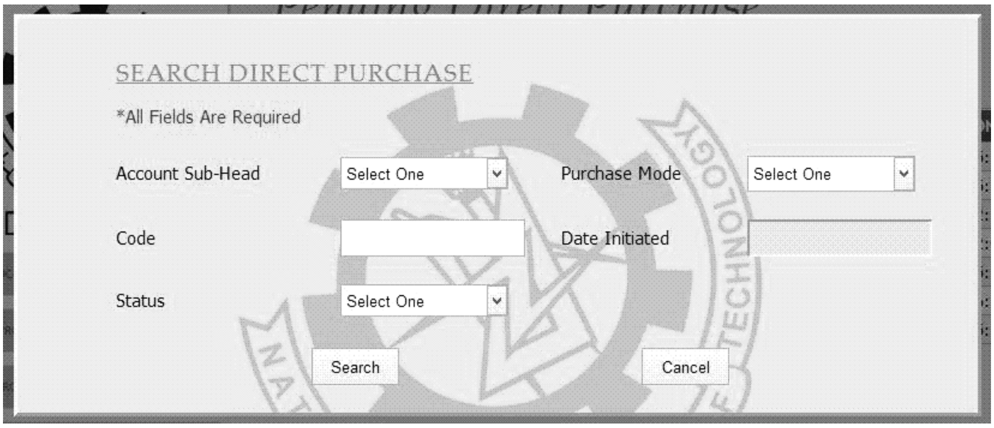


Figure 4.50: Search Pop-up (for Pending Direct Purchases).

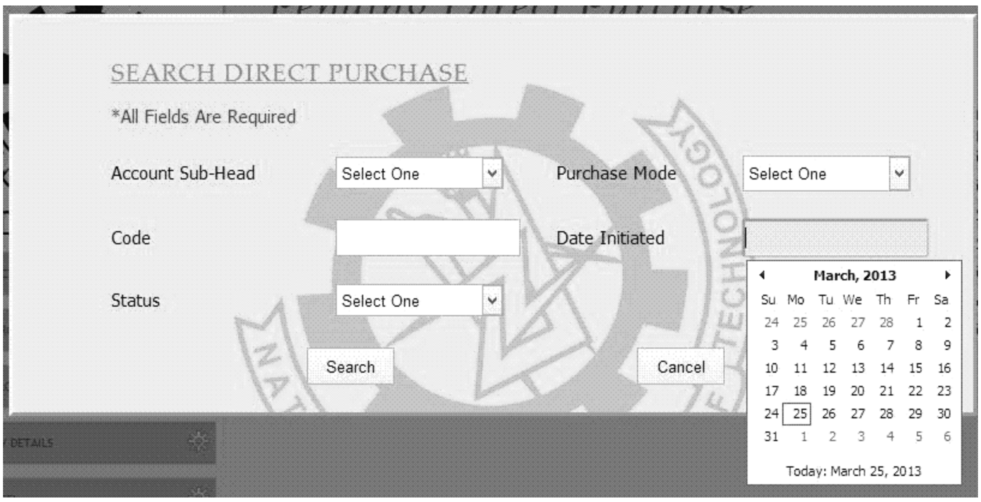


Figure 4.51: Calendar pop up for selecting the date in the search panel.

4.2.4 Advertised Tender Enquiry

For the purchase of Goods/Services of estimated value above Rs. 25 lakhs, Advertised Tender Enquiry is used. Advertised Tender Enquiries can be initiated under Departments or Projects. They can be of two formats:

(i) Single Bid: Only cost factor is considered while selecting the best bid.

(ii) Two-Part Bid: The Bid with the highest marks is selected. Marks are given on the basis of technical evaluation as well as cost.

Previous Enquiries are shown in the main table. The table shows the following information for each enquiry:

(i) Enquiry Code

(ii) Department/Project Name

(iii) Status

(iv) Date Created On

(v) Person In Charge

(vi) Format (Single Bid or Two-Part Bid)

The page(Fig. 4.52 on page 118) provides the following functionalities:

(i) Add New Advertised Enquiry

(ii) Search Advertised Enquiry

(iii) Add Goods/Services

(iv) Add Suppliers

(v) Modify an Enquiry

Figure 4.52: Initiate Advertised Enquiry Page

  – Takes to 'Add Goods/Services' page or 'Technical Evaluation' page or 'Financial Bid Opening' page or 'Comparative Statement' page depending upon the format and status of the Enquiry.

(vi) View Tender Letter

(vii) View Comparative Statement

4.2.4.1 Initiate Advertised Tender Enquiry

4.2.4.1.1 Add New Advertised Tender Enquiry

To initiate a new Advertised Tender Enquiry, the "Initiate Enquiry" button has to be clicked (Fig. 4.53 on page 119). Choosing the "Department/Project Indicator" Populates the "Department/Project Name" Dropdown List with concerned data (Departments/Projects). Format of Quotation can be "Single Bid" (Evaluation based only on cost) or "Two-Part Bid" (Evaluation based on cost and quality). Based on this selection there are three dates to be entered or four.

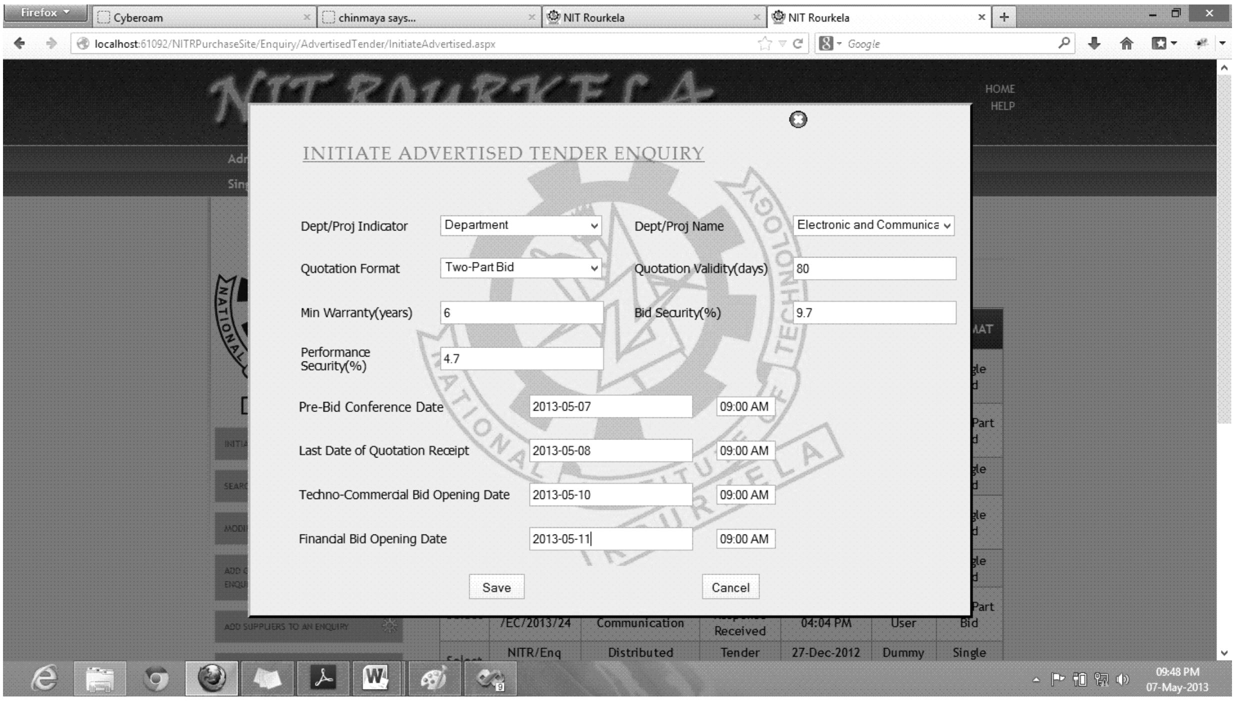


Figure 4.53: The Initiate Enquiry pop-up

Also, the dates are each filled using a calendar which appears when the textbox is clicked. After filling in the details, the "Save" button is clicked. If the data is correctly filled, the system gives a confirmation message (Fig. 4.54 on page 119).

Clicking on "Continue" here takes us to "Add Goods/Services" page.

4.2.4.1.2 Search Advertised Tender Enquiry

The "Search An Enquiry" button is used to refine search: (Fig. 4.55 on

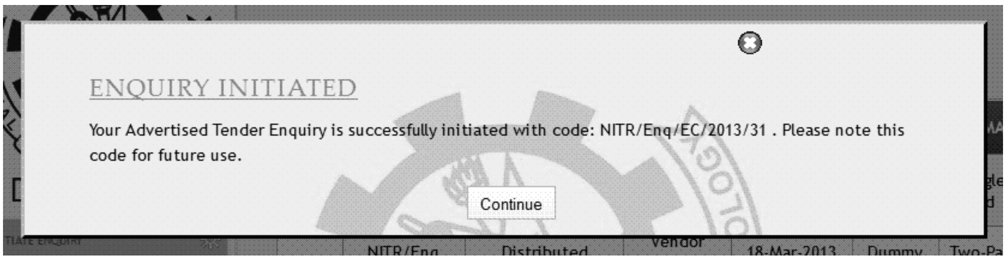


Figure 4.54: Confirmation Message

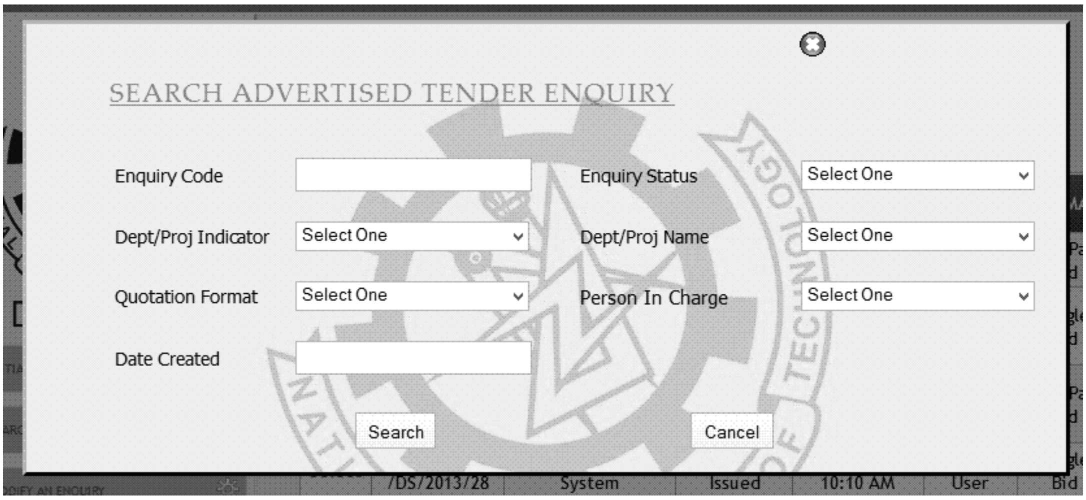


Figure 4.55: The Search Enquiry Pop-up

page 120).

The Search results are displayed in the main table.

4.2.4.2 Add Goods and Services

This can also be done by the "Continue" button described above or by selecting the Enquiry from the table and clicking the "Add Goods/Services button". This takes us to Select Goods/Services page (Fig. 4.56 on page 121). The main table in initially absent as no Goods/Services are already added. As we add goods/services, they appear here.

As we start typing in the name of Goods/Service the System provides choices (Fig. 4.57 on page 121).

After entering the Goods/Service, Quantity and Technical Details, clicking the "Save Goods/Service" button saves the Goods/Service in the enquiry (Fig. 4.58 on page 122).

Added Goods/Services can be deleted by selecting proper row and clicking the "Delete Goods/Service" button Goods and Services can only be added in a newly created Enquiry. Once Tender Letter is generated, it can't be done. We can click on "Add Suppliers of Goods/Services" button to go to "Select Suppliers" page. The

Figure 4.56: Select Goods/Services Page Initially

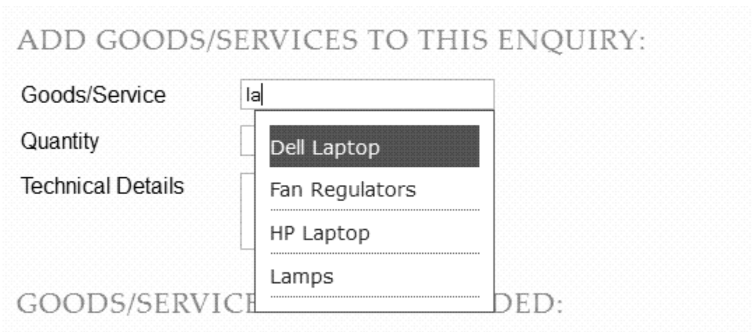


Figure 4.57: System predicting Goods/Services

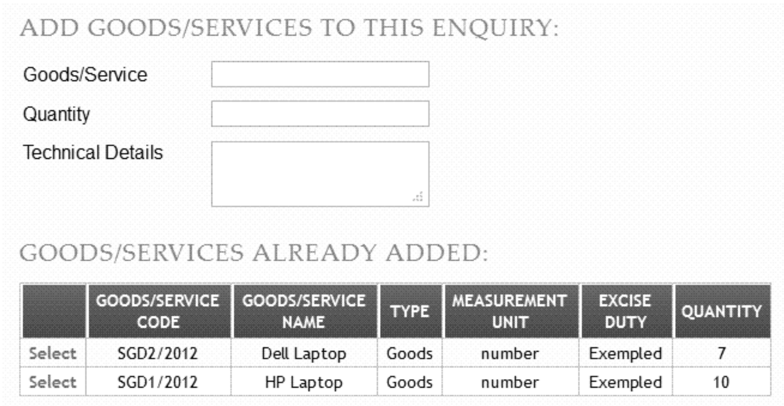


Figure 4.58: Main Table after adding two Goods/Services

"Finish Adding Goods and Services and Issue Tender" button takes issues tender.

4.2.4.3 Add Suppliers

The "Goods/Service" Dropdown List has all the Goods/Services already added to the Enquiry. When one of these is selected, the system shows corresponding Suppliers in the main table. The selecting/unselecting can be done by checking/unchecking the checkbox and clicking "Save Suppliers for this Goods/Service" button. (Fig. 4.59 on page 123 and Fig. (Fig. 4.60 on page 123)).

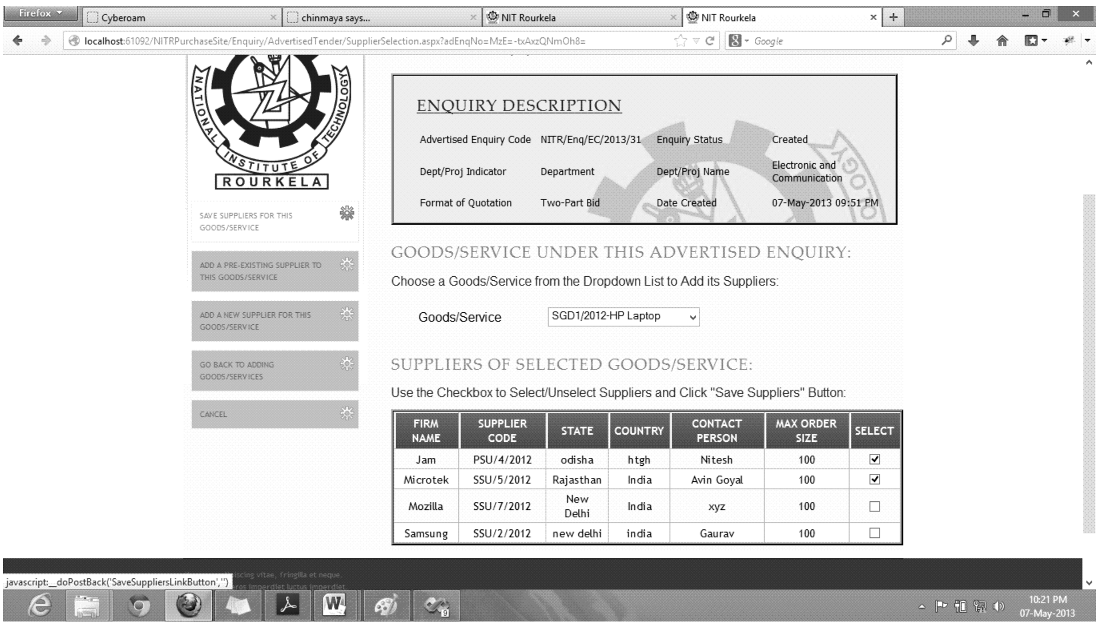
Clicking the "Go Back to Adding Goods/Services" button takes us back to Goods/Services page where we can issue Tender.

4.2.4.4 Technical Evaluation

When we select a Two-Part Bid Enquiry whose status is "Tender Issued", in the Initiate Enquiry page and click on "Modify an Enquiry" button, the system takes us to "Technical Bid Opening" page. Here we first have to enter the Total Technical and Cut-off Technical Marks. The cut-off marks should be less than total marks or System will prompt an error. (Fig. 4.61 on page 124 and Fig. 4.62 on page 124).

After this, the page opens (Fig. 4.63 on page 125). In the page, we have to do the technical evaluation of every supplier's product. Marks can be given between 0

Figure 4.59: The Select Suppliers page



FIRM NAME	SUPPLIER CODE	STATE	COUNTRY	CONTACT PERSON	MAX ORDER SIZE	SELECT
Jam	PSU/4/2012	odisha	htgh	Nitesh	100	☑
Microtek	SSU/5/2012	Rajasthan	India	Avin Goyal	100	☑
Mozilla	SSU/7/2012	New Delhi	India	xyz	100	☐
Samsung	SSU/2/2012	new delhi	india	Gaurav	100	☐

Figure 4.60: Selecting Suppliers for a Goods/Service

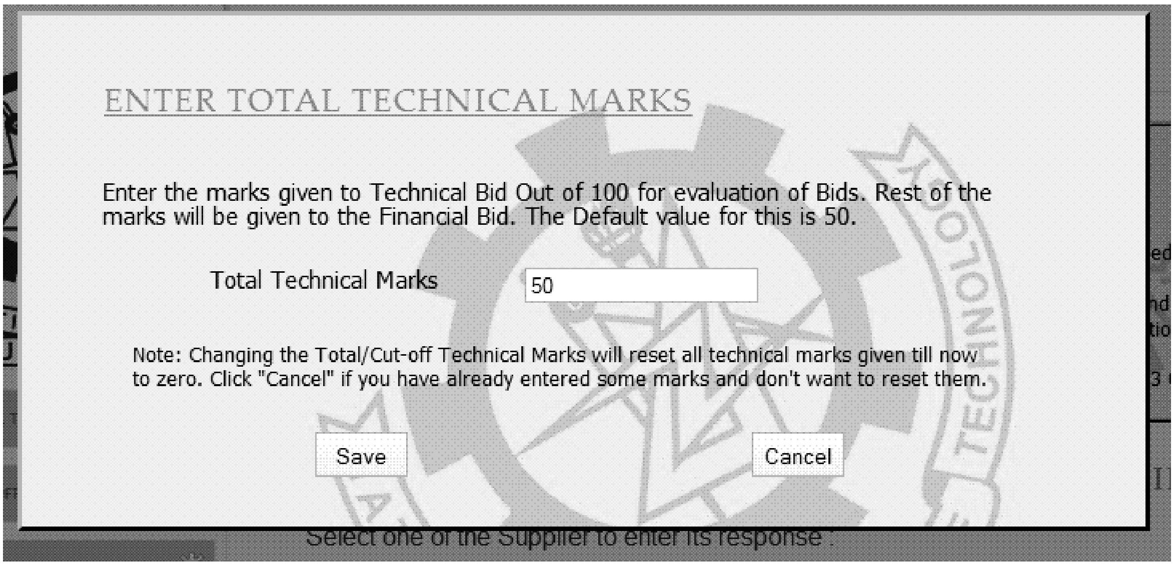


Figure 4.61: Total Technical Marks Pop-up

Figure 4.62: Cut-off Technical Marks Pop-up

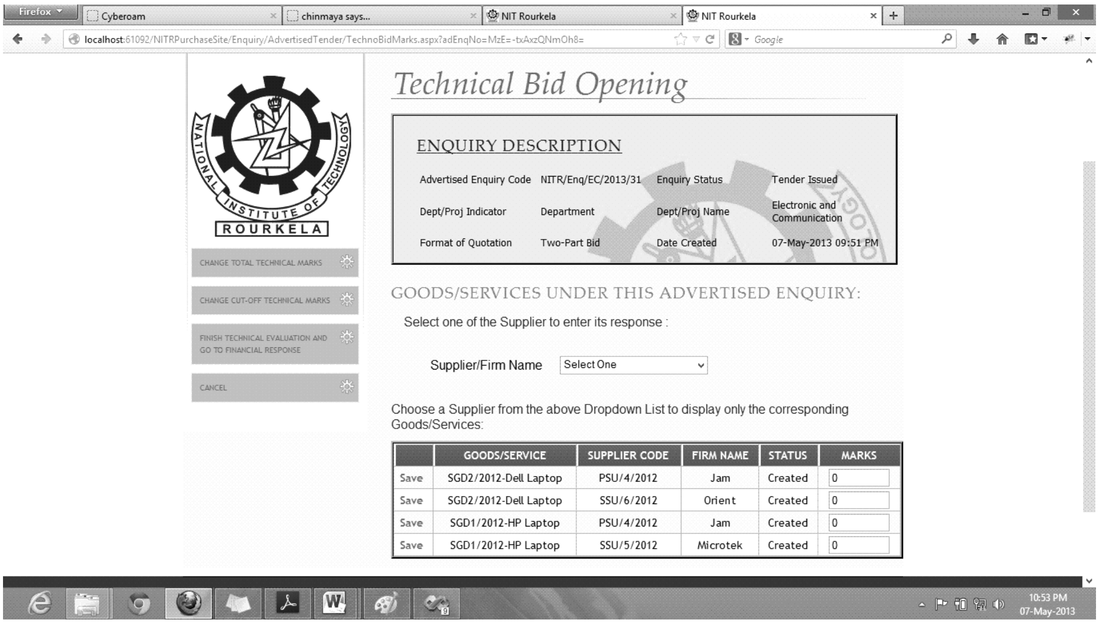


Figure 4.63: Technical Bid Opening Page

and Total Technical Marks by typing in the textbox and clicking "Save" button for that row. If marks less than cut-off marks is given that tender is rejected.

The Supplier/Firm Name dropdown list can be used to limit the main table.

After entering the marks, clicking on the "Finish Technical Evaluation and Go To Financial Response" takes us to the Financial Bid Opening page.

4.2.4.5 Financial Evaluation

When we select a Two-Part Bid Enquiry whose status is "Technical Evaluation Done" or a Single Bid Enquiry whose status is "Tender Issued", in the Initiate Enquiry page and click on "Modify an Enquiry" button, the system takes us to "Financial Bid Opening" page. (Fig. 4.64 on page 126 and Fig. 4.65 on page 126).

Here, Vendor Response for every enquiry is received by selecting a row and clicking the "Enter Supplier Response" button. The System opens the Supplier Response pop-up which is to be filled.

Rows can be deleted using the "Delete Row" button. The Supplier/Firm Name

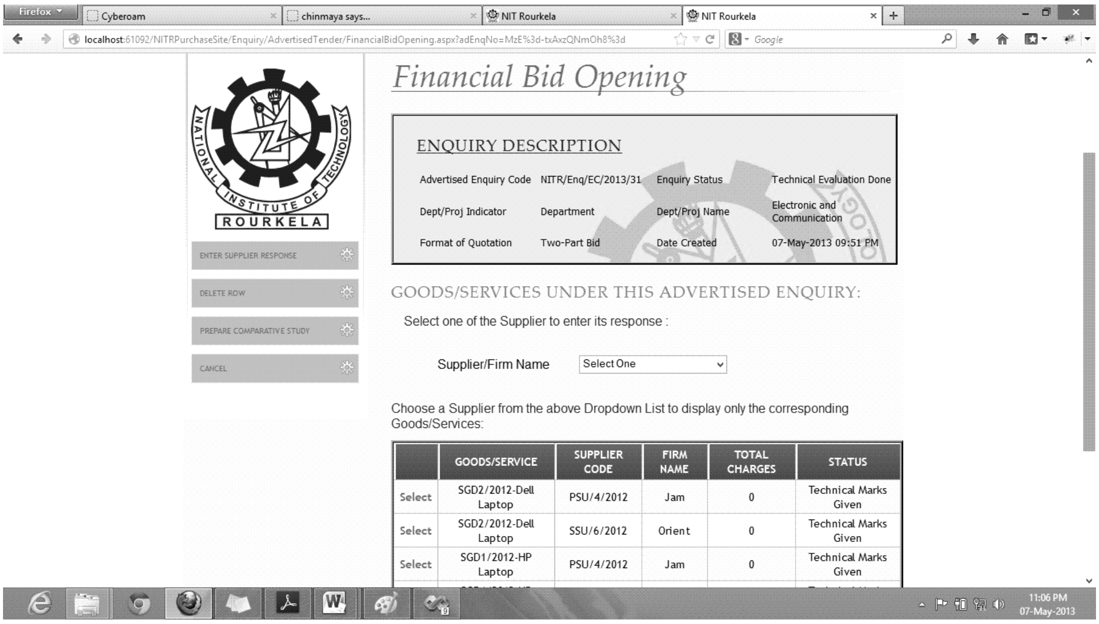


Figure 4.64: Financial Bid Opening Page

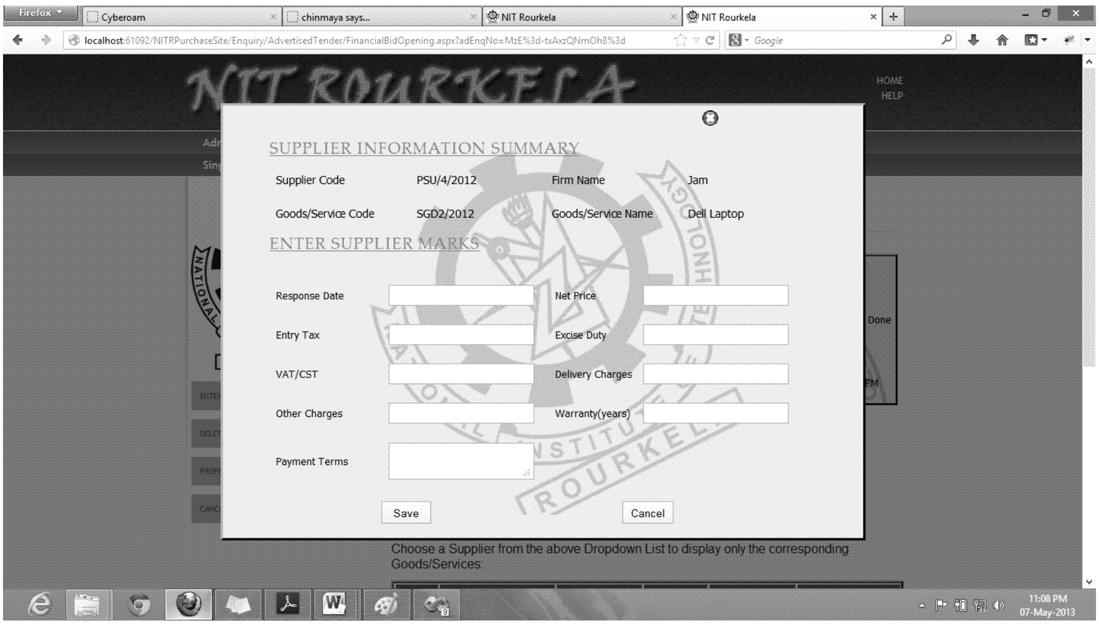


Figure 4.65: Supplier Response Pop-up

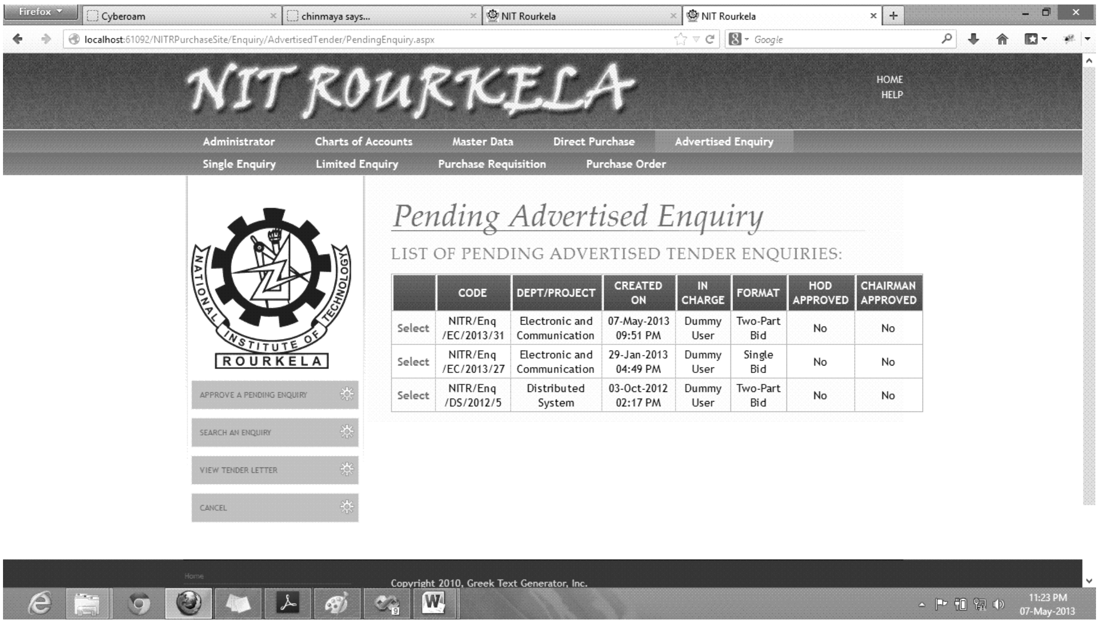


Figure 4.66: Pending Advertised Enquiry Page

dropdown list can be used to limit the main table.

Clicking the “Prepare Comparative Study” button prepares the Comparative Study.

4.2.4.6 Advertised Enquiry Approval

This page is to be used by the HODs and Chairman of Purchase Committee to approve Pending Advertised Enquiries. An Advertised Enquiry must be approved by both these people; until then, it is considered to be pending.

The page shows all Enquiries that are pending. You can search a particular Enquiry by clicking the “Search An Enquiry” button and entering the search criteria. Since the Comparative Study of an enquiry must be generated for it to be eligible for approval, the status of the Enquiry must be “Vendor Response Received”.

Select an Enquiry from the table and click the “Approve A Pending Enquiry” button to go to approval page.

(Fig. 4.66 on page 127 and Fig. 4.67 on page 128).

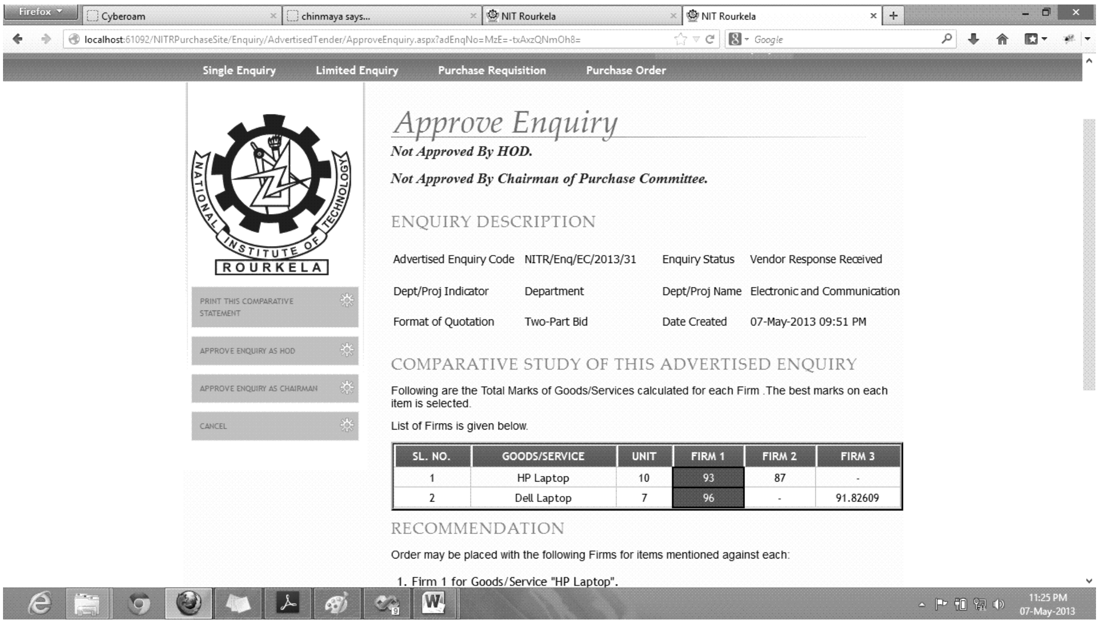


Figure 4.67: Approve Enquiry Page

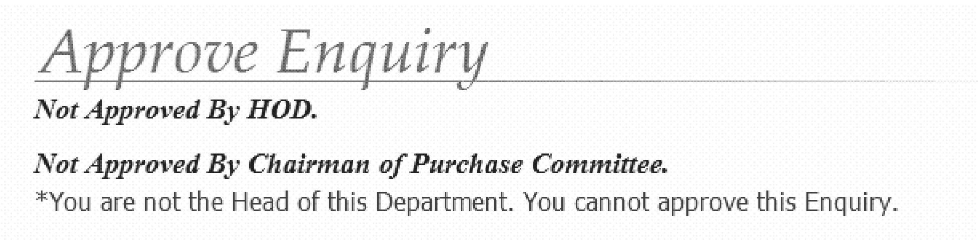


Figure 4.68: Error Message. User was not the HOD.

Here the HOD and the Chairman of the Purchase Committee approve the Enquiry by clicking the "Approve Enquiry as HOD" or "Approve Enquiry as Chairman" buttons. If the login is incorrect, the system will show an error message (Fig. 4.68 on page 128).

4.2.4.7 Generate Docs And Reports

4.2.4.7.1 Generate Tender Letter

Tender can be generated by clicking the "Finish Adding Goods/Services and Issue Tender" button in the Select Goods/Services page. The system asks for a

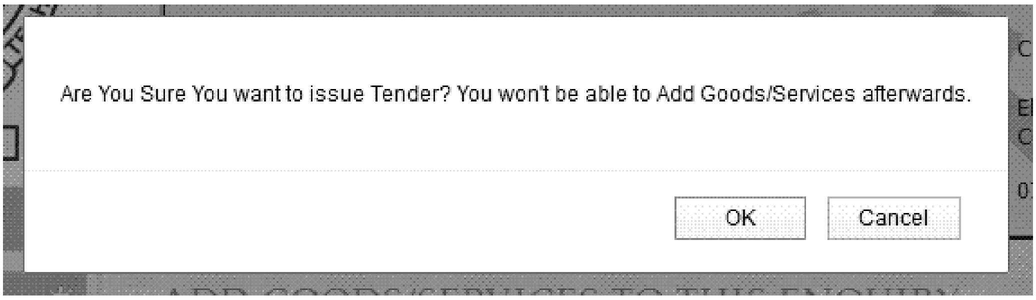


Figure 4.69: System Confirming Tender Generation

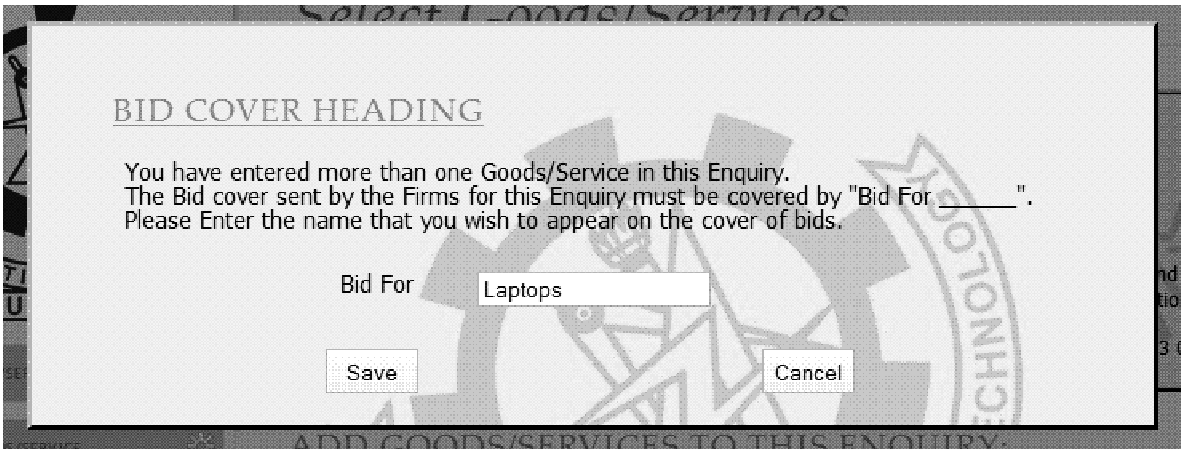


Figure 4.70: Bid For pop-up

confirmation. (Fig. 4.69 on page 129).

If more than one Goods/Service are added, the system will as for the name that will appear at the top of Bids. (Fig. 4.71 on page 130, Fig. 4.72 on page 131, Fig. 4.73 on page 132 and Fig. 4.74 on page 133).

Then the System takes us to Tender Letter page.

4.2.4.7.2 Print Tender Letter

Clicking the "Print Tender Letter" button on the Tender letter page prints the tender letter. If one of Suppliers/Firms are selected from the dropdown list, the address of that firm is printed in the tender letter. (Fig. 4.75 on page 134).

4.2.4.7.3 Generate Comparative Study

Clicking the "Prepare Comparative Study" button on the Financial Bid

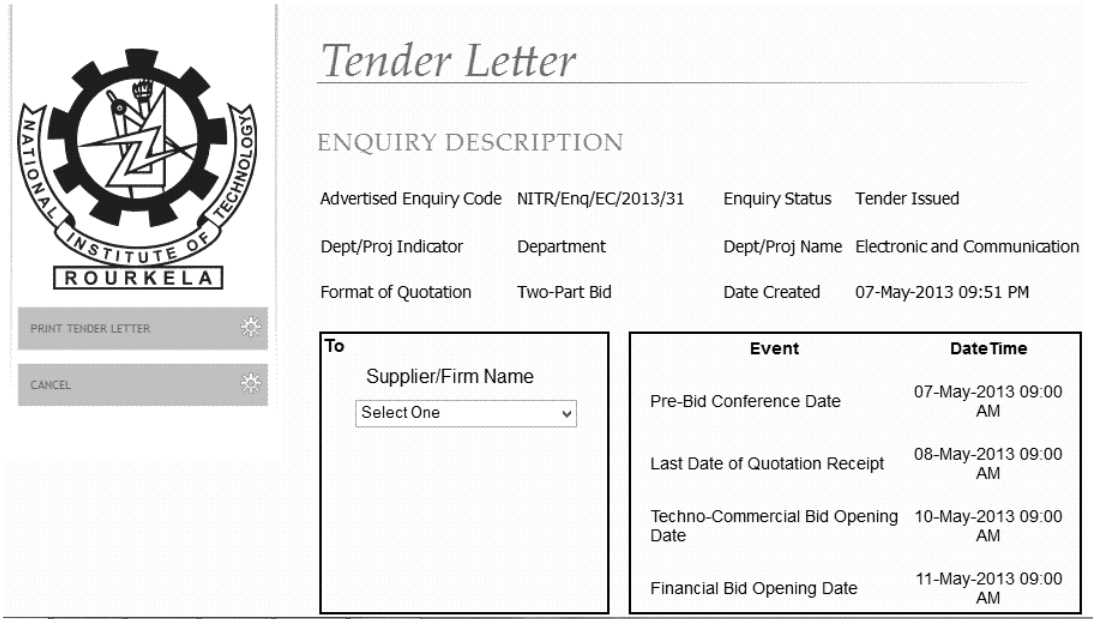


Figure 4.71: Tender Letter Part 1

Opening page prepares the Comparative Study after asking for confirmation. (Fig. 4.76 on page 134 and Fig. 4.77 on page 135).

4.2.4.7.4 Print Comparative Study

Clicking the "Print Comparative Statement" button on the Comparative Study opens a pop-up window for printing Comparative Study. (Fig. 4.78 on page 135).

Dear Sir,

We intend to purchase the commodities specified below and invite quotations in accordance with the terms and conditions detailed in the bid document. If you are interested, kindly send your offer with prices and complete terms within the time mentioned above. Please send your quotation to:

Head, Department of
Electronic and Communication
Attn.: Prof. A. K. Turuk
NATIONAL INSTITUTE OF TECHNOLOGY
ROURKELA – 769 008, ODISHA

Sincerely,
Name: Dummy User
In-Charge: ________________
Lab: ____________________

Encl :

(1) Schedule of requirement, specifications, dates etc.

(2) Bid document containing detail terms and conditions.

1. SCHEDULE OF REQUIREMENTS

SL. NO.	GOODS/SERVICE NAME	QUANTITY
1	Dell Laptop	7
2	HP Laptop	10

2. SPECIFICATIONS AND ALLIED TECHNICAL DETAILS

SL. NO.	TECHNICAL DETAILS
1	4GB Ram
2	4 GB Ram

3. FORMAT OF QUOTATION

It is a two-part bid with separate techno-commercial and price bids. Please see item 1.12 of instructions for method of bidding.

Figure 4.72: Tender Letter Part 2

The bid envelope should be super-scribed with:

Bid For Laptops vide Enquiry No: NITR/Enq/EC/2013/31, Dated: 07-May-2013 09:51 PM

5.

Quotations should be valid for a period of 80 days from the closing date of the bid.

6. SOME IMPORTANT DATES

i) Pre-Bid Conference Date	07-May-2013 09:00 AM
ii) Last Date of Quotation Receipt	08-May-2013 09:00 AM
iii) Techno-Commercial Bid Opening Date	10-May-2013 09:00 AM
iv) Financial Bid Opening Date	11-May-2013 09:00 AM

7.

Warranty of 6 years must be provided.

8(A) EXCISE DUTY:

The Institute is exempt from Excise Duty. Please state applicable excise duty as a separate item.

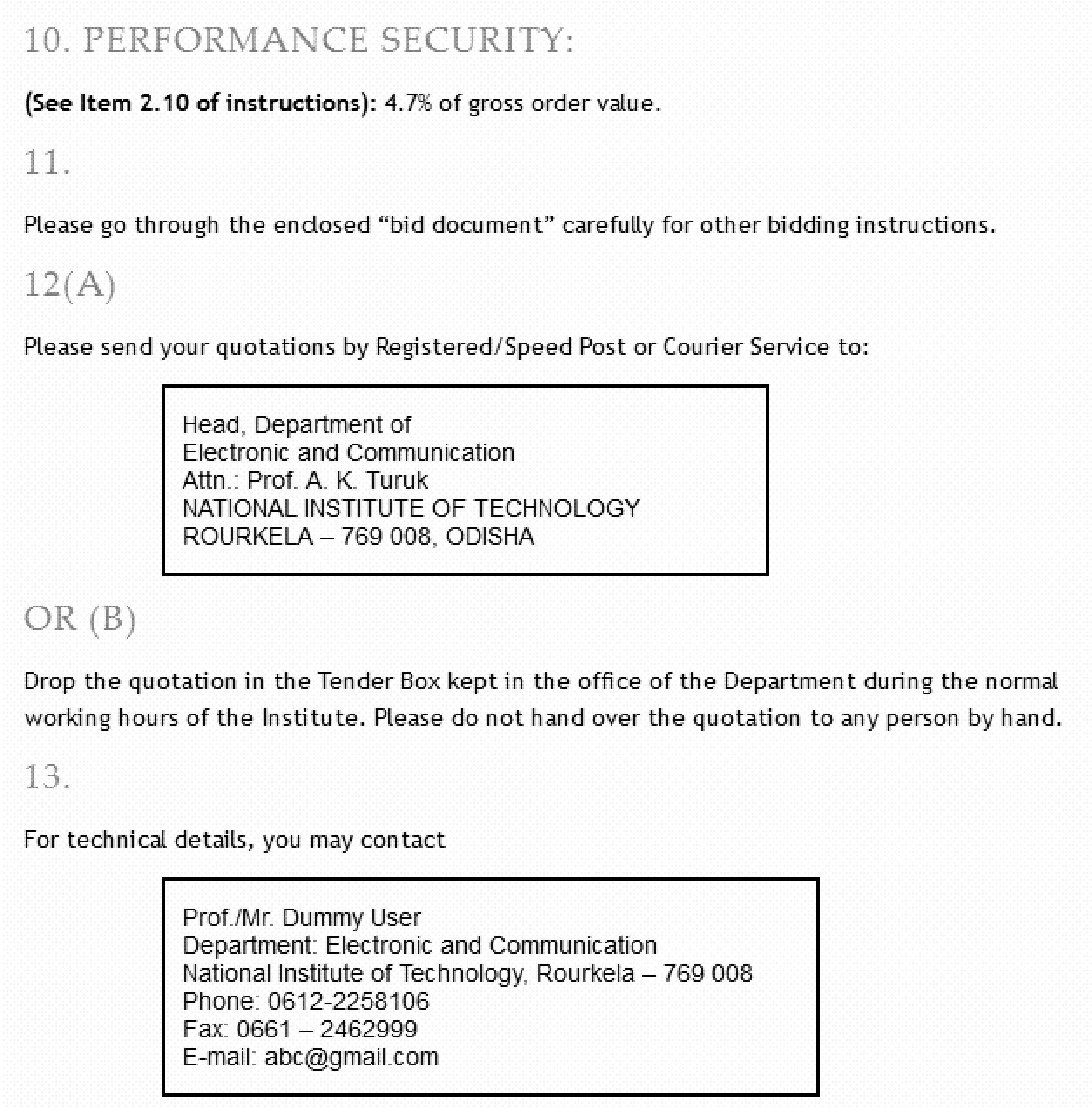
8(B) VAT/CST:

The Institute is not authorized to give C or D form. CST or VAT should be charge according to applicable rates.

8(C) ENTRY TAX:

The State of Odisha charges entry tax on all goods entering the State. Please include it in your quotation as a separate item. Entry Tax will be reimbursed on production of proof of payment.

Figure 4.73: Tender Letter Part 3



10. PERFORMANCE SECURITY:

(See Item 2.10 of instructions): 4.7% of gross order value.

11.

Please go through the enclosed "bid document" carefully for other bidding instructions.

12(A)

Please send your quotations by Registered/Speed Post or Courier Service to:

Head, Department of
Electronic and Communication
Attn.: Prof. A. K. Turuk
NATIONAL INSTITUTE OF TECHNOLOGY
ROURKELA – 769 008, ODISHA

OR (B)

Drop the quotation in the Tender Box kept in the office of the Department during the normal working hours of the Institute. Please do not hand over the quotation to any person by hand.

13.

For technical details, you may contact

Prof./Mr. Dummy User
Department: Electronic and Communication
National Institute of Technology, Rourkela – 769 008
Phone: 0612-2258106
Fax: 0661 – 2462999
E-mail: abc@gmail.com

Figure 4.74: Tender Letter Part 4

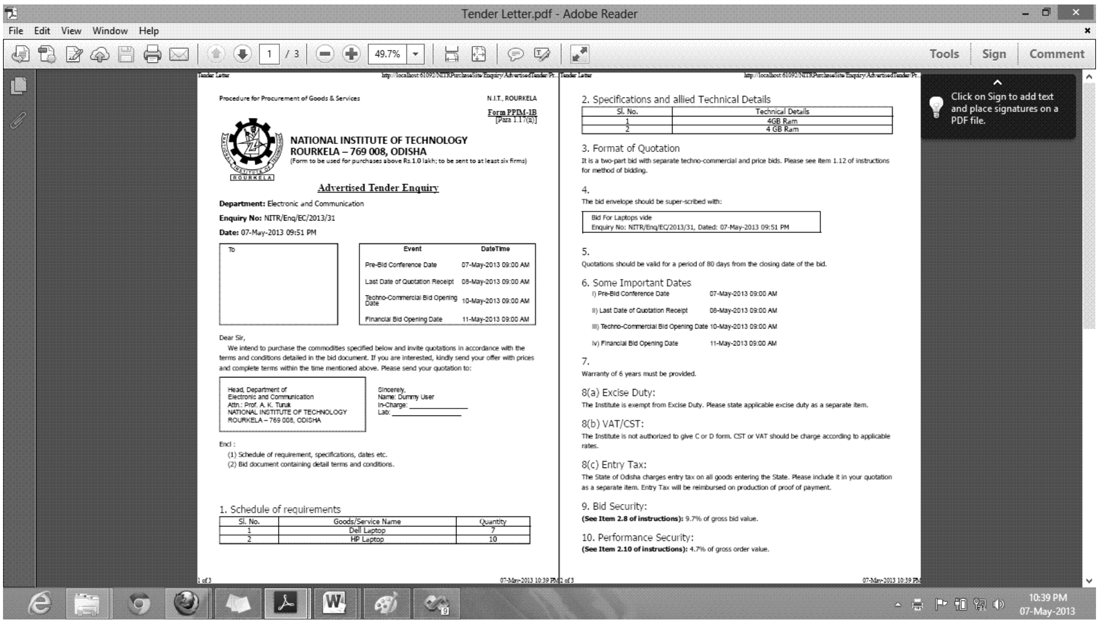


Figure 4.75: Tender Letter printed into a pdf document

Figure 4.76: Confirmation for Comparative Study

Figure 4.77: Comparative Study Page

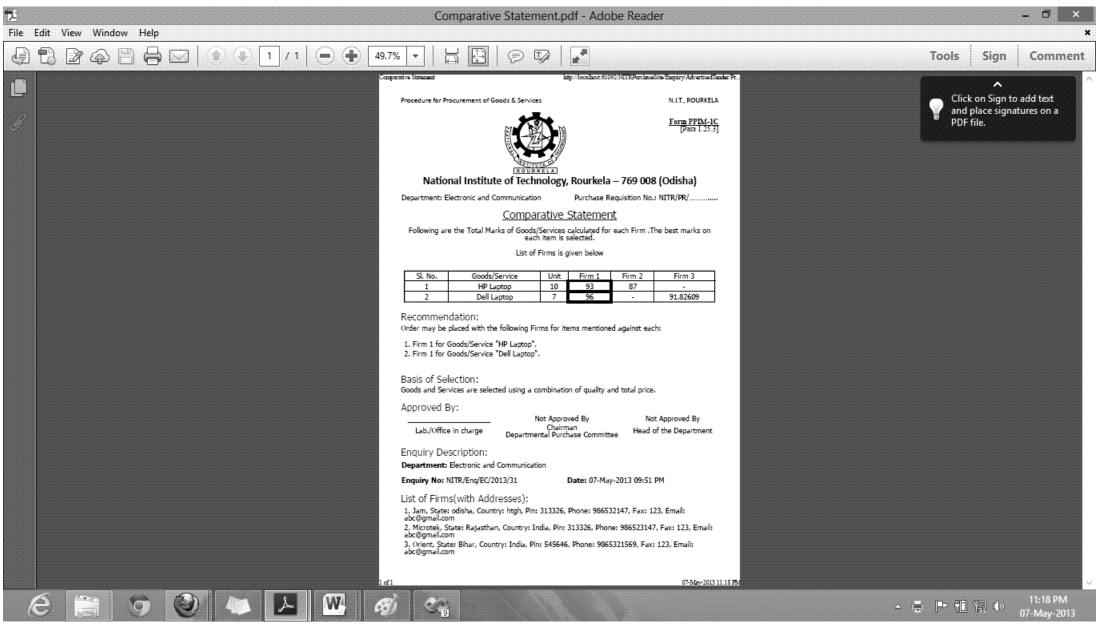


Figure 4.78: Comparative Statement printed into a pdf document

4.2.5 Manage Limited Tender Enquiry

This method is adopted when estimated value of the goods to be procured is up to Rs.25 lakh (Rupees Twenty-five lakh). In such cases, copies of the bidding documents should be sent directly by speed post/registered post/courier/fax/e-mail to selected Registered Suppliers for the goods. Enquiries may also be sent to reputed suppliers of the goods, even if they are not registered with NIT.

(i) Single Bid: Only cost factor is considered while selecting the best bid.

(ii) Two-Part Bid: The Bid with the highest marks is selected. Marks are given on the basis of technical evaluation as well as cost.

Previous Enquiries are shown in the main table(Fig. 4.79 on page 137). The table shows the following information for each enquiry:

(i) Enquiry Code

(ii) Department/Project Name

(iii) Status

(iv) Date Created On

(v) Person In Charge

(vi) Format (Single Bid or Two-Part Bid)

The page provides the following functionalities:

(i) Add New Limited Enquiry

(ii) Search Limited Enquiry

(iii) Add Goods/Services

(iv) Add Suppliers

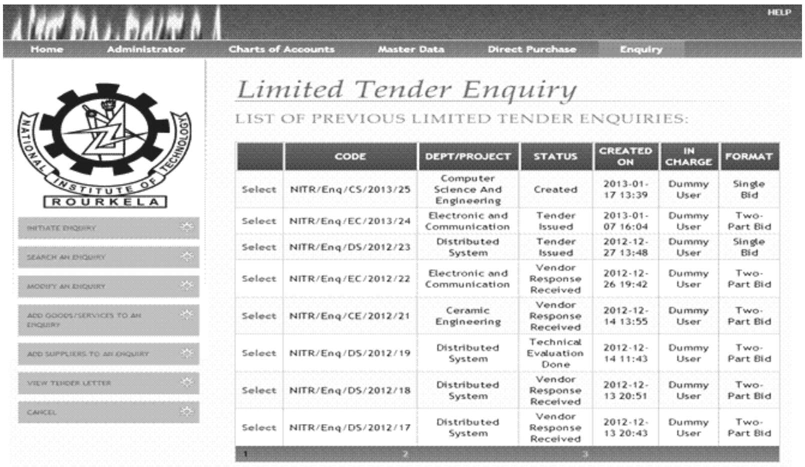


Figure 4.79: Initiate Limited Enquiry Page

(v) Modify an Enquiry

- Takes to Add Goods/Services page or Technical Evaluation page or Financial Bid Opening page or Comparative Statement page depending upon the format and status of the Enquiry.

(vi) View Tender Letter

(vii) View Comparative Statement

4.2.5.1 Initiate Limited Tender Enquiry

4.2.5.1.1 Add New Limited Enquiry (Above One Lakh)

To initiate a new Limited Tender Enquiry, the “Initiate Enquiry” button has to be clicked (Fig. 4.80 on page 138). Choosing the Department/Project Indicator Populates the Department/Project Name Dropdown List with concerned data (Departments/Projects). Format of Quotation can be Single Bid (Evaluation based only on cost) or Two-Part Bid (Evaluation based on cost and quality). Based on this selection there are three dates to be entered or four.

4.2.5.1.2 Add New Limited Enquiry (Below One Lakh)

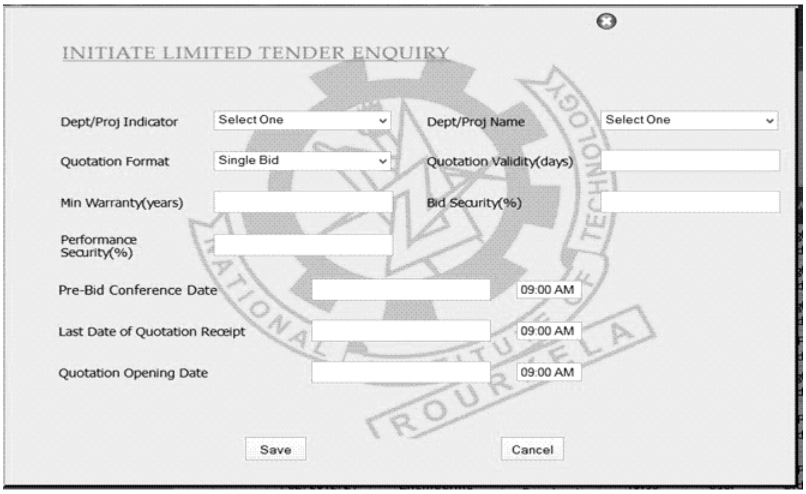


Figure 4.80: The Initiate Enquiry pop-up(Above One Lakh)

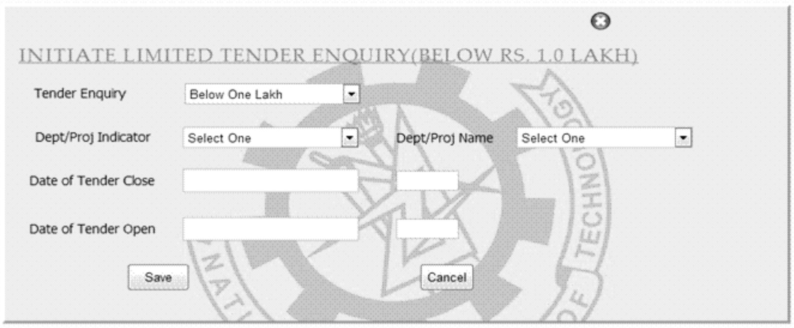


Figure 4.81: The Initiate Enquiry pop-up(Below One Lakh)

To initiate a new Limited Tender Enquiry, the “Initiate Enquiry” button has to be clicked (Fig. 4.81 on page 138). Select Below One Lakh from Tender Enquiry Drop Down Choosing the Department/Project Indicator Populates the Department/Project Name Dropdown List with concerned data (Departments/Projects).

After filling in the details, when the Save button is clicked, the system gives a confirmation message. Clicking on OK here takes us to Add Goods/Services page. This can also be done by selecting the Enquiry from the table and clicking the Add Goods/Services button. The Add Suppliers button takes the user to Add Suppliers page if Goods/Services are already added.

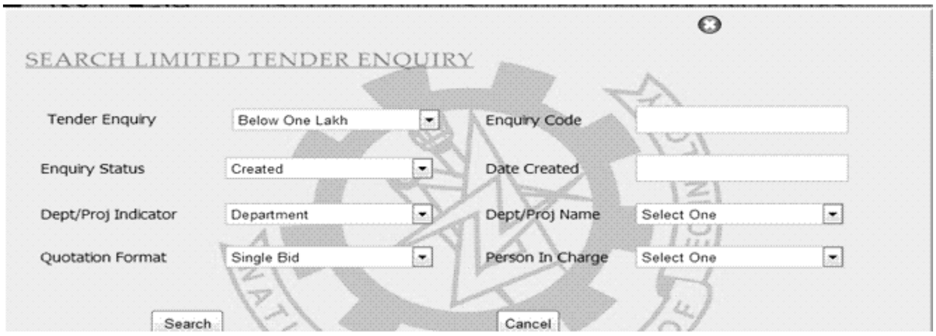


Figure 4.82: The Search Enquiry Pop-up(Above One Lakh)

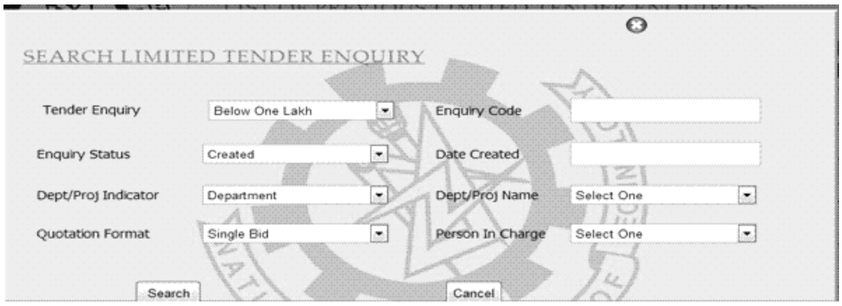


Figure 4.83: The Search Enquiry Pop-up(Below One Lakh)

4.2.5.1.3 Search Limited Enquiry (Above One Lakh)

To refine search click the "Search" button has to be clicked and the search criterion is to be entered. The System searches allocations according to this criterion. If no result satisfies the criterion, the system displays this as a message (Fig. 4.82 on page 139).

4.2.5.1.4 Search Limited Enquiry (Below One Lakh)

To refine search click the "Search" button has to be clicked and the search criterion is to be entered. The System searches allocations according to this criterion. If no result satisfies the criterion, the system displays this as a message (Fig. 4.83 on page 139).

Figure 4.84: Select Goods/Services Page Initially

4.2.5.2 Add Goods And Service

This can also be done by the Continue button described above or by selecting the Enquiry from the table and clicking the Add Goods/Services button. This takes us to Select Goods/Services page. The main table in initially absent as no Goods/Services are already added. As we add goods/services, they appear here (Fig. 4.84 on page 140).

The header panel will show information about the Limited tender enquiry number under which Goods and Service will add. Panel having information Limited Enquiry Code, Enquiry Status, Dept/Proj Indicator, Dept/Proj Name, Format of Quotation and Date Created. Goods/Service Name have auto search technique, if input character matched with primary Goods and Service table result will display as above. After filling information about Quantity and Technical Details, click on Save Goods/Service. Information about Goods and Service save under a particular Limited Tender Enquiry Number (Fig. 4.85 on page 141).

After Click Save Goods/Service (Fig. 4.86 on page 141).

Added Goods/Services can be deleted by selecting proper row and clicking the Delete Goods/Service button (Fig. 4.87 on page 142).

Goods and Services can only be added in a newly created Enquiry. Once Tender Letter is generated, it cant be done.

Figure 4.85: Filling Goods/Services Information

Figure 4.86: Main Table after adding two Goods/Services

We can click on Add Suppliers of Goods/Services button to go to Select Suppliers page. The Finish Adding Goods and Services and Issue Tender button takes issues tender .

4.2.5.3 Add Supplier

The Goods/Service Dropdown Lists can be used to limit the supplier of particular Goods/Services appearing in the table. The selecting/unselecting can be done by checking/unchecking the checkbox and clicking Save Suppliers button. System then gives a confirmation. Select Supplier page have five actions these are Save Supplier For This Goods/Service, Add a Pre Existing Supplier To This Goods/Service, Go Back To Adding Goods/Service, Cancel.(Fig. 4.88 on page 142).

Clicking the Go Back to Adding Goods/Services button takes us back to Goods/Services page where we can issue Tender. (Fig. 4.89 on page 142).

Figure 4.87: Delete a Goods/Services

Figure 4.88: Selecting Suppliers for a Goods/Service

Figure 4.89: Save Suppliers for a Goods/Service

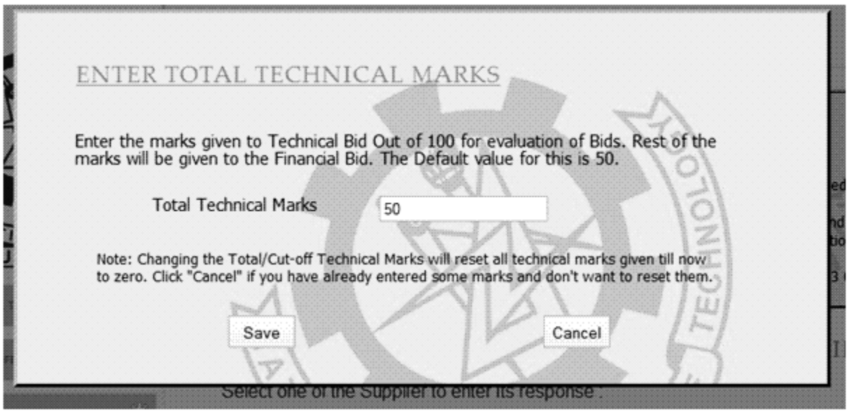


Figure 4.90: Total Technical Marks Pop-up

Figure 4.91: Cut-off Technical Marks Pop-up

4.2.5.4 Technical Evaluation

When we select a Two-Part Bid Enquiry whose status is Tender Issued, in the Initiate Enquiry page and click on Modify an Enquiry button, the system takes us to Technical Bid Opening page.

Here we first have to enter the Total Technical and Cut-off Technical Marks. The cut-off marks should be less than total marks or System will prompt an error (Fig. 4.90 on page 143 and Fig. 4.91 on page 143).

After this, the page opens(Fig. 4.92 on page 144). In the page, we have to do the technical evaluation of every suppliers product. Marks can be given between 0 and Total Technical Marks by typing in the textbox and clicking Save button for

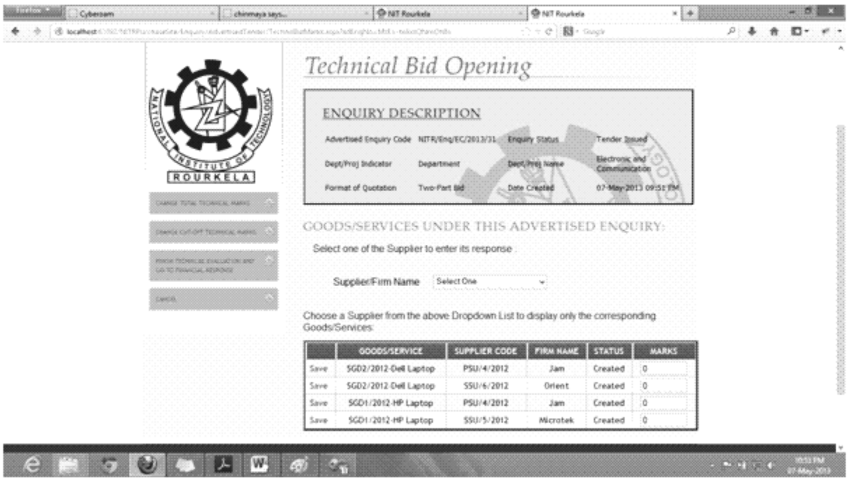


Figure 4.92: Technical Bid Opening Page

that row. If marks less than cut-off marks is given that tender is rejected.

LimitedEnquiryTechnicalBidOpening

The Supplier/Firm Name dropdown list can be used to limit the main table.

After entering the marks, clicking on the Finish Technical Evaluation and Go To Financial Response takes us to the Financial Bid Opening page.

4.2.5.5 Financial Evaluation

When we select a Two-Part Bid Enquiry whose status is Technical Evaluation Done or a Single Bid Enquiry whose status is Tender Issued, in the Initiate Enquiry page and click on Modify an Enquiry button, the system takes us to Financial Bid Opening page(Fig. 4.93 on page 145).

Here, Vendor Response for every enquiry is received by selecting a row and clicking the Enter Supplier Response button. The System opens the Supplier Response pop-up which is to be filled(Fig. 4.94 on page 145). Rows can be deleted using the Delete Row button. The Supplier/Firm Name dropdown list can be used to limit the main table.

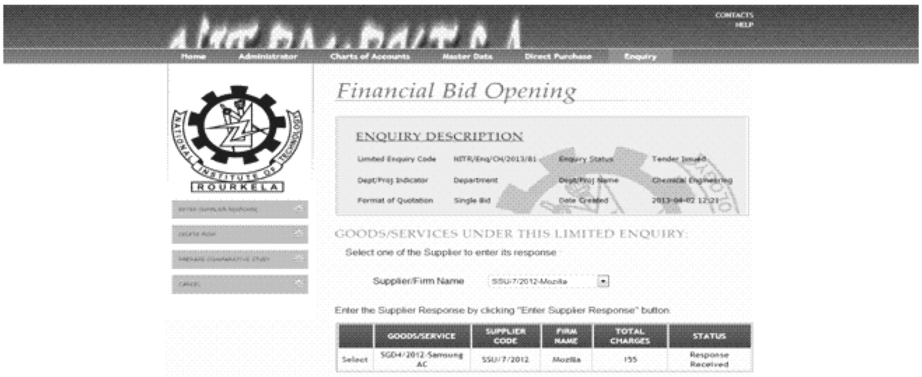


Figure 4.93: Financial Bid Opening Page

Figure 4.94: Supplier Response Pop-up

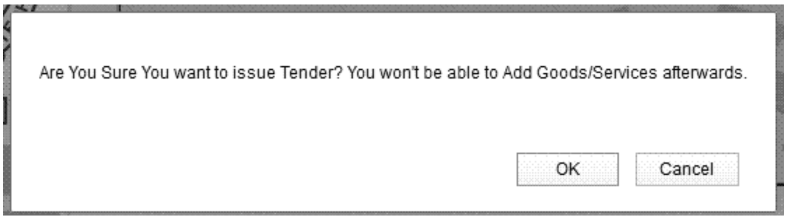


Figure 4.95: System Confirming Tender Generation

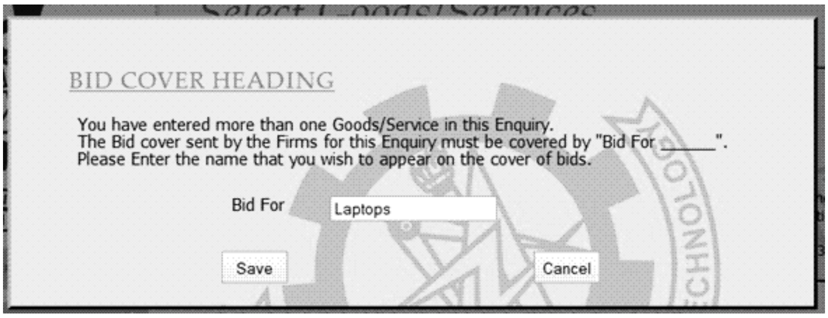


Figure 4.96: Bid For Pop-up

4.2.5.7 Generate Reports and Docs

4.2.5.7.1 Generate Tender Letter

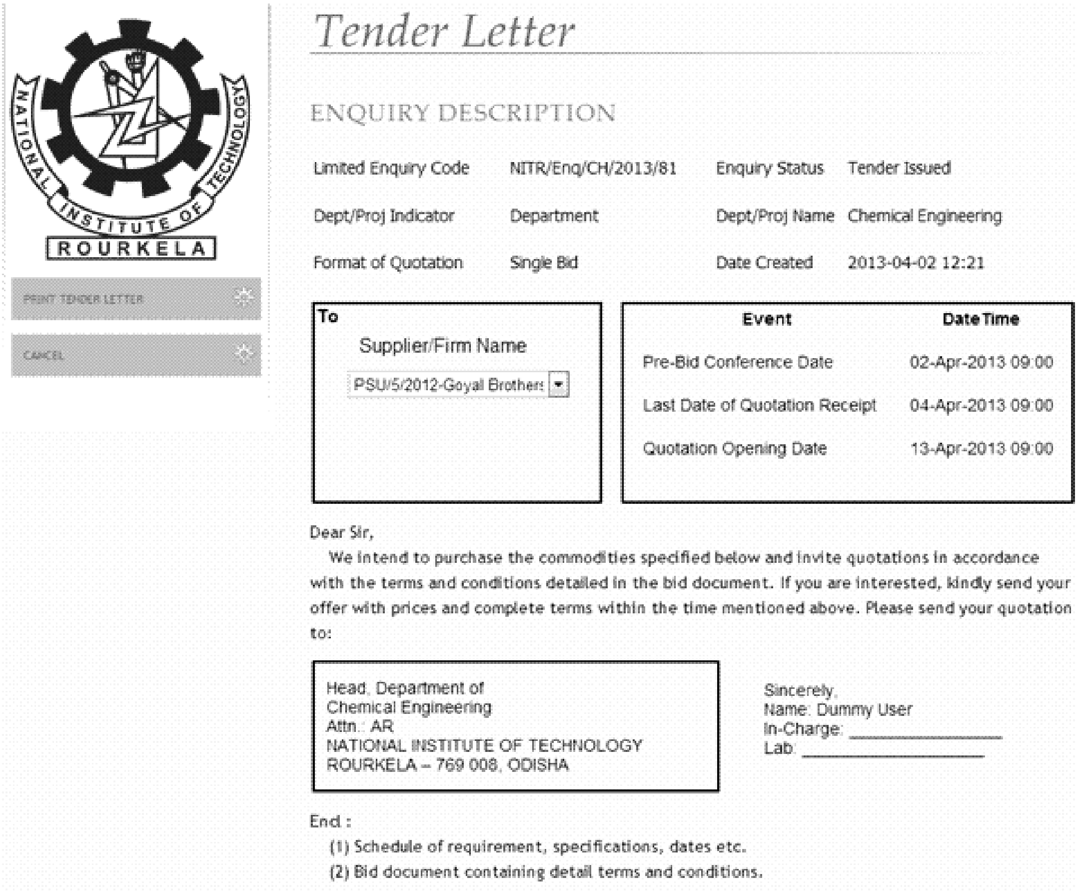
Tender can be generated by clicking the Finish Adding Goods/Services and Issue Tender button in the Select Goods/Services page. The system asks for a confirmation(Fig. 4.95 on page 146).

If more than one Goods/Service are added, the system will as for the name that will appear at the top of Bids(Fig. 4.96 on page 146).

Then the System takes us to Tender Letter page(Fig. 4.97 on page 147, Fig. 4.98 on page 148 and Fig. 4.99 on page 149).

4.2.5.7.2 Print Tender Letter

Clicking the Print Tender Letter button on the Tender letter page prints the tender letter. If one of Suppliers/Firms are selected from the dropdown list, the address of that firm is printed in the tender letter.



NATIONAL INSTITUTE OF TECHNOLOGY ROURKELA

PRINT TENDER LETTER

CANCEL

Tender Letter

ENQUIRY DESCRIPTION

Limited Enquiry Code	NITR/Enq/CH/2013/81	Enquiry Status	Tender Issued
Dept/Proj Indicator	Department	Dept/Proj Name	Chemical Engineering
Format of Quotation	Single Bid	Date Created	2013-04-02 12:21

To

Supplier/Firm Name

PSU/5/2012-Goyal Brothers

Event	Date Time
Pre-Bid Conference Date	02-Apr-2013 09:00
Last Date of Quotation Receipt	04-Apr-2013 09:00
Quotation Opening Date	13-Apr-2013 09:00

Dear Sir,

We intend to purchase the commodities specified below and invite quotations in accordance with the terms and conditions detailed in the bid document. If you are interested, kindly send your offer with prices and complete terms within the time mentioned above. Please send your quotation to:

Head, Department of
Chemical Engineering
Attn.: AR
NATIONAL INSTITUTE OF TECHNOLOGY
ROURKELA – 769 008, ODISHA

Sincerely,
Name: Dummy User
In-Charge: ______________
Lab: ______________

Encl :
(1) Schedule of requirement, specifications, dates etc.
(2) Bid document containing detail terms and conditions.

Figure 4.97: Tender Letter Part 1

1. SCHEDULE OF REQUIREMENTS

SL. NO.	GOODS/SERVICE NAME	QUANTITY
1	Samsung AC	2

2. SPECIFICATIONS AND ALLIED TECHNICAL DETAILS

SL. NO.	TECHNICAL DETAILS
1	wrf

3. FORMAT OF QUOTATION

It is a single bid; please give all technical specifications and price bid in one envelope.

4.

The bid envelope should be super-scribed with:

Bid For Samsung AC vide
Enquiry No: NITR/Enq/CH/2013/81, Dated: 2013-04-02 12:21

5.

Quotations should be valid for a period of 1 days from the closing date of the bid.

6. SOME IMPORTANT DATES

i) Pre-Bid Conference Date	02-Apr-2013 09:00
ii) Last Date of Quotation Receipt	04-Apr-2013 09:00
iii) Quotation Opening Date	13-Apr-2013 09:00

7.

Warranty of 1 years must be provided.

8(A) EXCISE DUTY:

The Institute is exempt from Excise Duty. Please state applicable excise duty as a separate item.

Figure 4.98: Tender Letter Part 2

8(C) ENTRY TAX:

The State of Odisha charges entry tax on all goods entering the State. Please include it in your quotation as a separate item. Entry Tax will be reimbursed on production of proof of payment.

9. BID SECURITY:

(See Item 2.8 of instructions): 0.4% of gross bid value.

10. PERFORMANCE SECURITY:

(See Item 2.10 of instructions): 1% of gross order value.

11.

Please go through the enclosed "bid document" carefully for other bidding instructions.

12(A)

Please send your quotations by Registered/Speed Post or Courier Service to:

Head, Department of
Chemical Engineering
Attn.: AR
NATIONAL INSTITUTE OF TECHNOLOGY
ROURKELA – 769 008, ODISHA

OR (B)

Drop the quotation in the Tender Box kept in the office of the Department during the normal working hours of the Institute. Please do not hand over the quotation to any person by hand.

13.

For technical details, you may contact

Prof./Mr. Dummy User
Department: Chemical Engineering
National Institute of Technology, Rourkela – 769 008
Phone: 0612-2258106
Fax: 0661 – 2462999
E-mail: abc@gmail.com

Figure 4.99: Tender Letter Part 3

4.2.6 Manage Single Tender Enquiry

For the purchase of Goods/Services from a ¡b¿Single Supplier¡/b¿, Single Tender Enquiry is used. Single Tender enquiry must be used only under the following circumstances, with prior approval of the Director:

(i) It is in the knowledge of the NIT that only a particular firm is the manufacturer of the required goods.

(ii) In a case of emergency, the required goods are necessarily to be purchased from a particular source for which the reasons for such decision and why the requirement could not be foreseen should be recorded in writing and prior approval of the Director obtained.

(iii) For standardization of machinery or spare parts to be compatible to the existing sets of equipment (on the advice of a competent technical expert and approved by the Director), the required item is to be purchased only from a selected firm.

Previous Enquiries are shown in the main table. The table shows the following information for each enquiry:

(i) Enquiry Code

(ii) Department/Project Name

(iii) Status

(iv) Date Created On

(v) Person In Charge

The page(Fig. 4.100 on page 151) provides the following functionalities:

(i) Add New Single Tender Enquiry

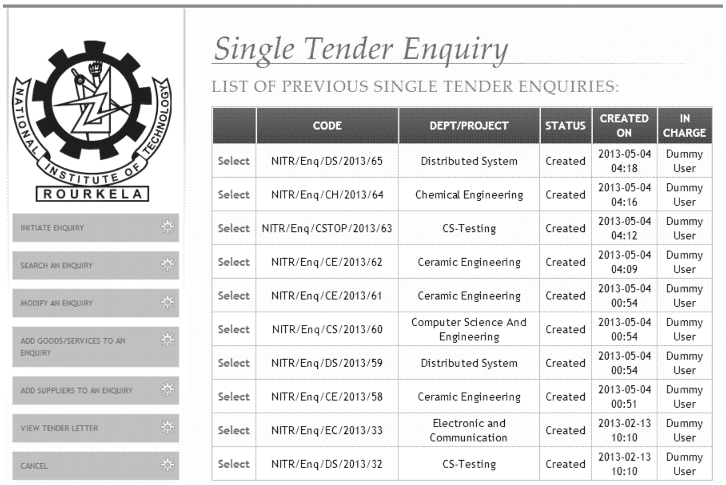


Figure 4.100: Initiate Single Tender Enquiry Page

(ii) Search Single Tender Enquiry

(iii) Modify an Enquiry

– Takes to 'Add Goods/Services' page.

(iv) Add Goods/Services

(v) Add Suppliers

(vi) View Tender Letter

4.2.6.1 Initiate Single Tender Tender Enquiry

4.2.6.1.1 Add New Single Tender Tender Enquiry

To initiate a new Single Tender Tender Enquiry, the "Initiate Enquiry" button has to be clicked (Fig. 4.101 on page 152). Choosing the "Department/Project Indicator" Populates the "Department/Project Name" Dropdown List with concerned data (Departments/Projects). Approximate cost for the enquiry. Reasons for this type of purchase.

4.2.6.1.2 Search Single Tender Tender Enquiry

Figure 4.101: The Initiate Enquiry pop-up

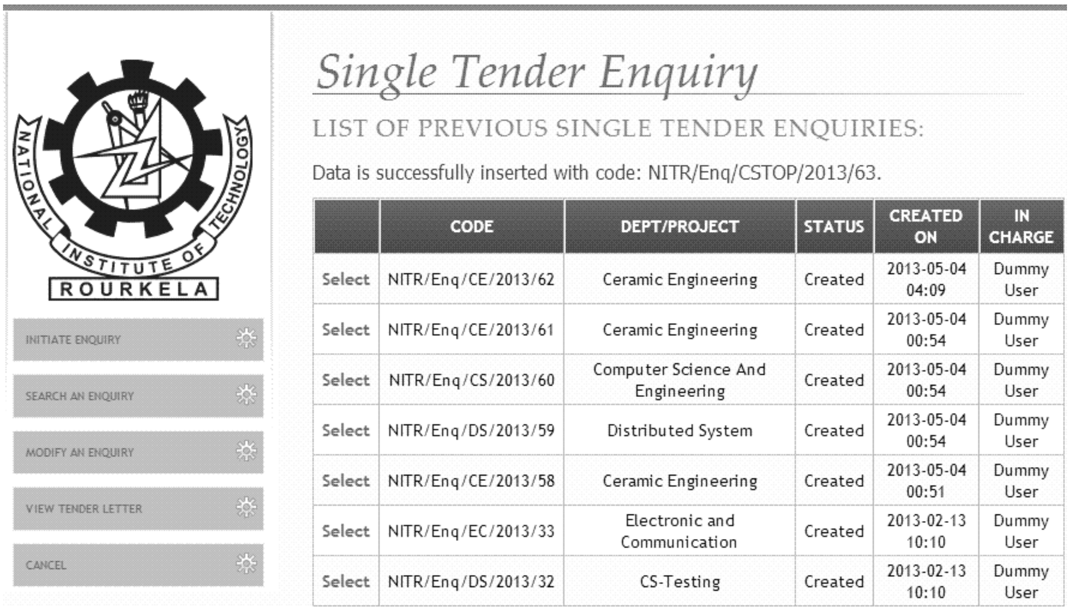


Figure 4.102: Confirmation Message

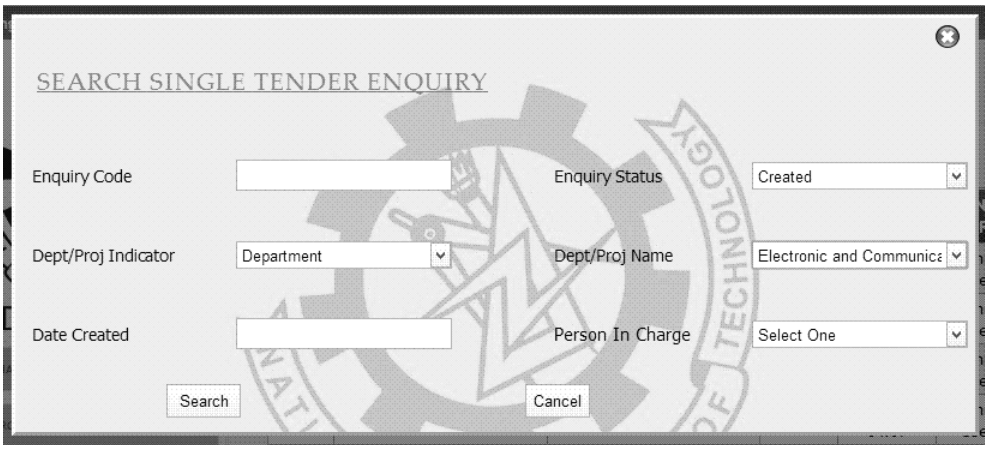


Figure 4.103: The Search Enquiry Pop-up

Figure 4.104: Select Goods/Services Page Initially

The "Search An Enquiry" button is used to refine search: (Fig. 4.103 on page 153).

The Search results are displayed in the main table.

4.2.6.2 Add Goods and Services

This can be done by selecting the Enquiry from the table and clicking the "Add Goods/Services button". This takes us to Select Goods/Services page (Fig. 4.104 on page 153). The main table in initially absent as no Goods/Services are already added. As we add good/service, it appear here.

Figure 4.105: The Select Suppliers page

After entering the Goods/Service and Quantity clicking the “Save Goods/Service” button saves the Goods/Service in the enquiry.

Added Goods/Services can be deleted by selecting proper row and clicking the “Delete Goods/Service” button Goods and Services can only be added in a newly created Enquiry. Once Tender Letter is generated, it can’t be done. We can click on “Add Suppliers of Goods/Services” button to go to “Select Suppliers” page.

4.2.6.3 Add Suppliers

The “Goods/Service” Dropdown List has the Goods/Services already added to the Enquiry. When this is selected, the system shows corresponding Suppliers in the main table. The selecting/unselecting can be done by checking/unchecking the checkbox and clicking “Save Suppliers for the Goods/Service” button. (Fig. 4.105 on page 154).

4.2.6.4 Single Tender Enquiry Approval

This page is to be used by the Assst. Registrar and Director to approve Pending Single Tender Enquiries. An SingleTender Enquiry must be approved by both these people; until then, it is considered to be pending.

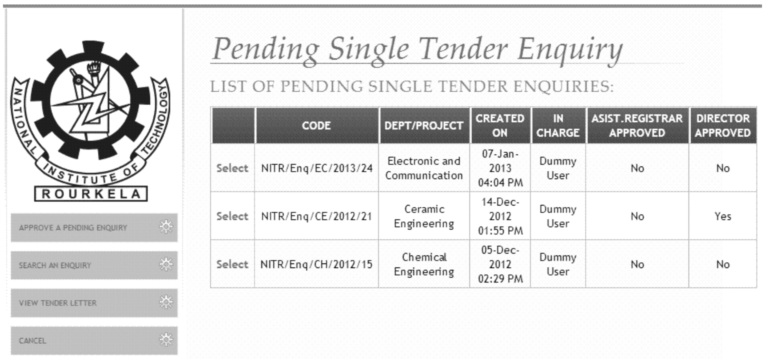


Figure 4.106: Pending Single Tender Enquiry Page

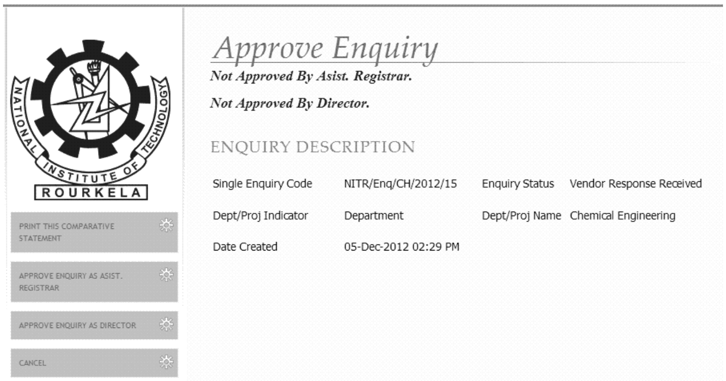


Figure 4.107: Approve Enquiry Page

The page shows all Enquiries that are pending. You can search a particular Enquiry by clicking the “Search An Enquiry” button and entering the search criteria.

Select an Enquiry from the table and click the “Approve A Pending Enquiry” button to go to approval page.

(Fig. 4.106 on page 155 and Fig. 4.107 on page 155).

Here the Asst. Registrar and Director approve the Enquiry by clicking the “Approve Enquiry as Asst. Registrar” or “Approve Enquiry as Director” buttons. If the login is incorrect, the system will show an error message.

4.2.6.5 Generate Docs And Reports

4.2.6.5.1 Generate Tender Letter

Tender can be generated by clicking the “Finish Adding Goods/Services and Issue Tender” button in the Select Goods/Services page. The system asks for a confirmation.

4.2.6.5.2 Print Tender Letter

Clicking the “Print Tender Letter” button on the Tender letter page prints the tender letter. If one of Suppliers/Firms are selected from the dropdown list, the address of that firm is printed in the tender letter.

4.2.7 Manage Requisition

For purchases above Rs.15,000, Purchase Requisition is filled up and approved by the HOD/HOC/PI/ Registrar and sent to the Internal Audit Section.

The Internal Audit Section examines the proposal and vets it if found in order. It will specifically examine the process of tendering, recommendation of Purchase Committee and other procedural matters. If it is found to be in order, the vetted proposal is forwarded to the Accounts Section.

The Finance Officer books the funds, if available and send the requisition to the competent authority for approval/sanction. In case of purchase proposals, which fall within the powers of the HOD/HOC/PI/Registrar, the Purchase Requisition signed by these authorities shall be deemed to have prior approval/sanction. In other cases, the purchase proposal requires approval/sanction of the Director or Dean.

Previous Requisitions are shown in the main table. The table shows the following information for each enquiry (Fig. 4.108 on page 158).

(i) Requisition Code

(ii) Enquiry Code

(iii) Account Head

(iv) Account Sub-Head

(v) Person In Charge

(vi) Status

The module provides the following functionalities:

(i) Add New Requisition

(ii) Search Requisition

(iii) View Details of Requisition

Figure 4.108: Initiate Requisition Page

(iv) Internal Audit Approval

(v) Finance Approval

(vi) Fund Sanctioning

(vii) Generate Requisition Letter

(viii) Print Requisition

4.2.7.1 Initiate Requisition

4.2.7.1.1 Add New Requisition

To initiate a new Requisition, the “Initiate Requisition” button has to be clicked. The Initiate Requisition pop-up appears as a result (Fig. 4.109 on page 159).

Here the Search button allows for Searching Approved Enquiries. Clicking it opens a pop-up window with approved enquiries. There is a search button here as well that allows for search using pop-up. Clicking submit button in the appropriate

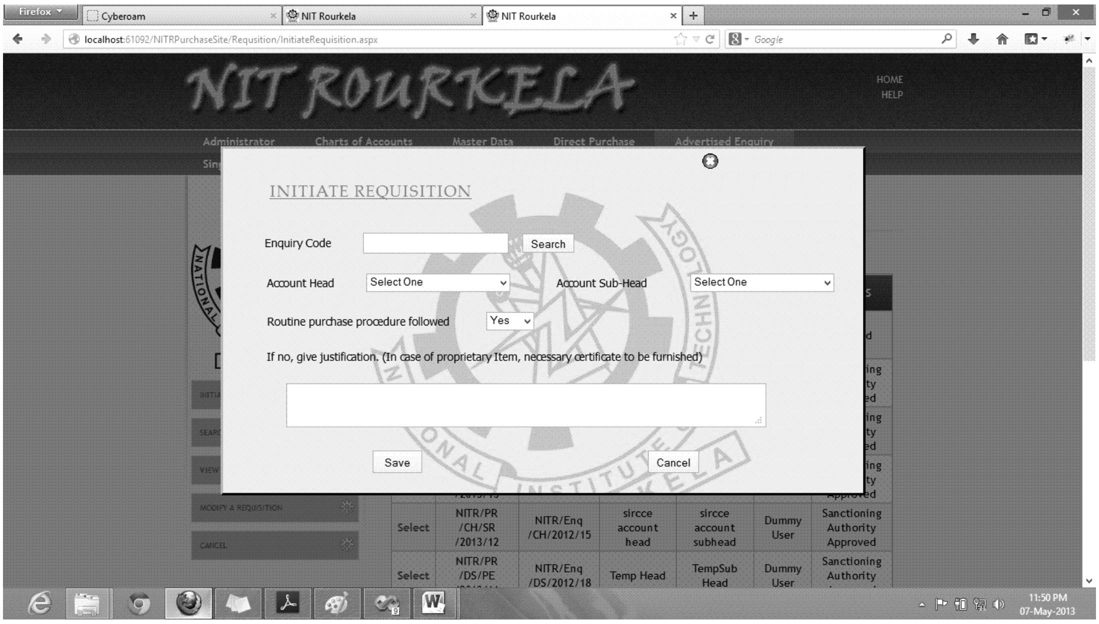


Figure 4.109: The Initiate Requisition pop-up

row submits the Enquiry Code to the Initiate Requisition pop-up (Fig. 4.110 on page 160).

After filling in the details, the “Save” button is clicked. If the data is correctly filled, the system gives a confirmation message (Fig. 4.111 on page 160)

4.2.7.1.2 Search Requisition

The “Search A Requisition” button is used to refine search. (Fig. 4.112 on page 161).

The Search results are displayed in the main table.

4.2.7.2 View Details of a Requisition

Selecting a Requisition from the main table and clicking the “View Details of a Requisition” button shows the details of the requisition. The details depend upon the status of the requisition (Fig. 4.113 on page 162 and Fig. 4.113 on page 162).

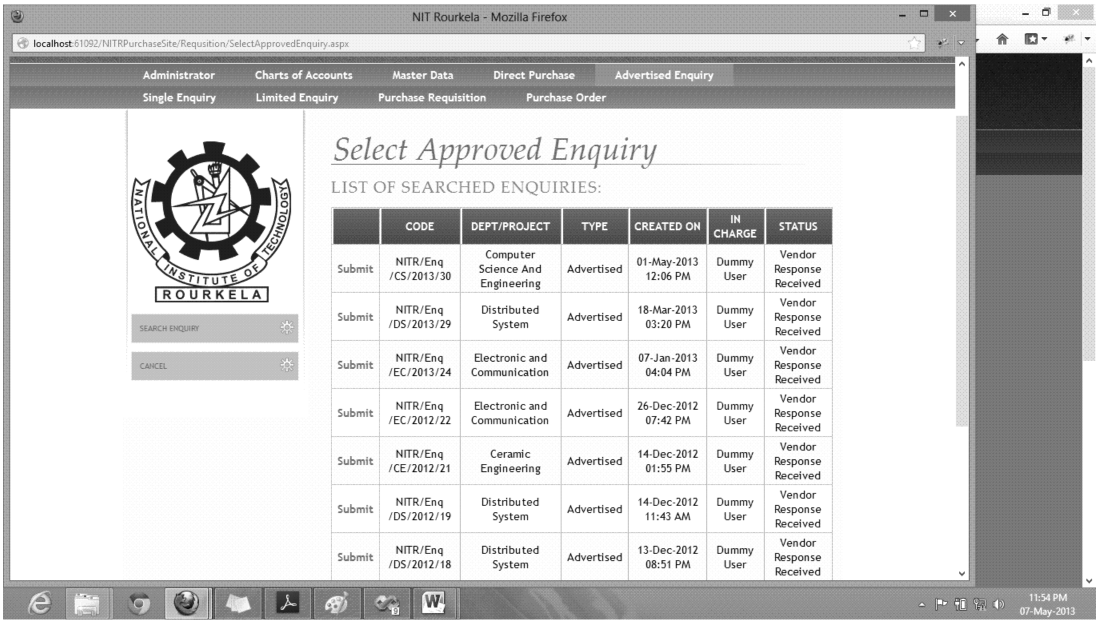


Figure 4.110: Search Approved Enquiry pop-up.

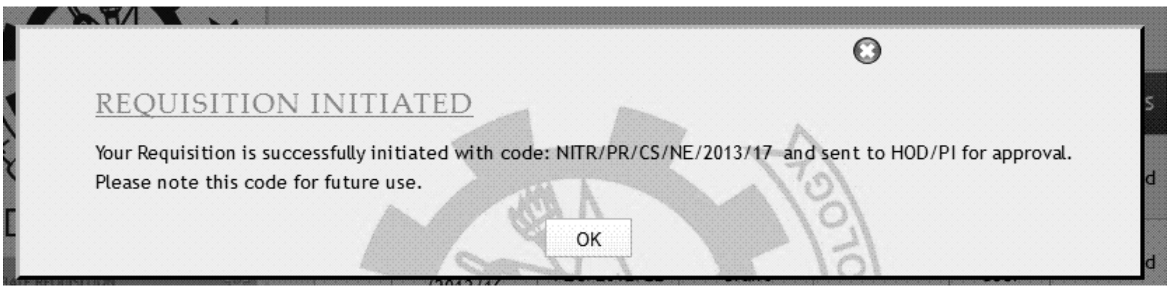


Figure 4.111: Confirmation Message

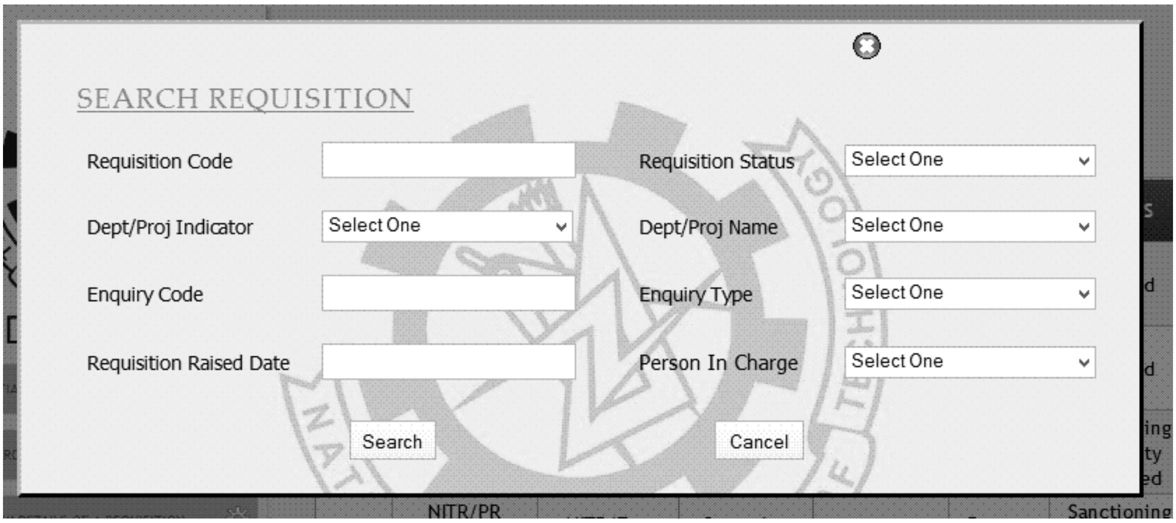
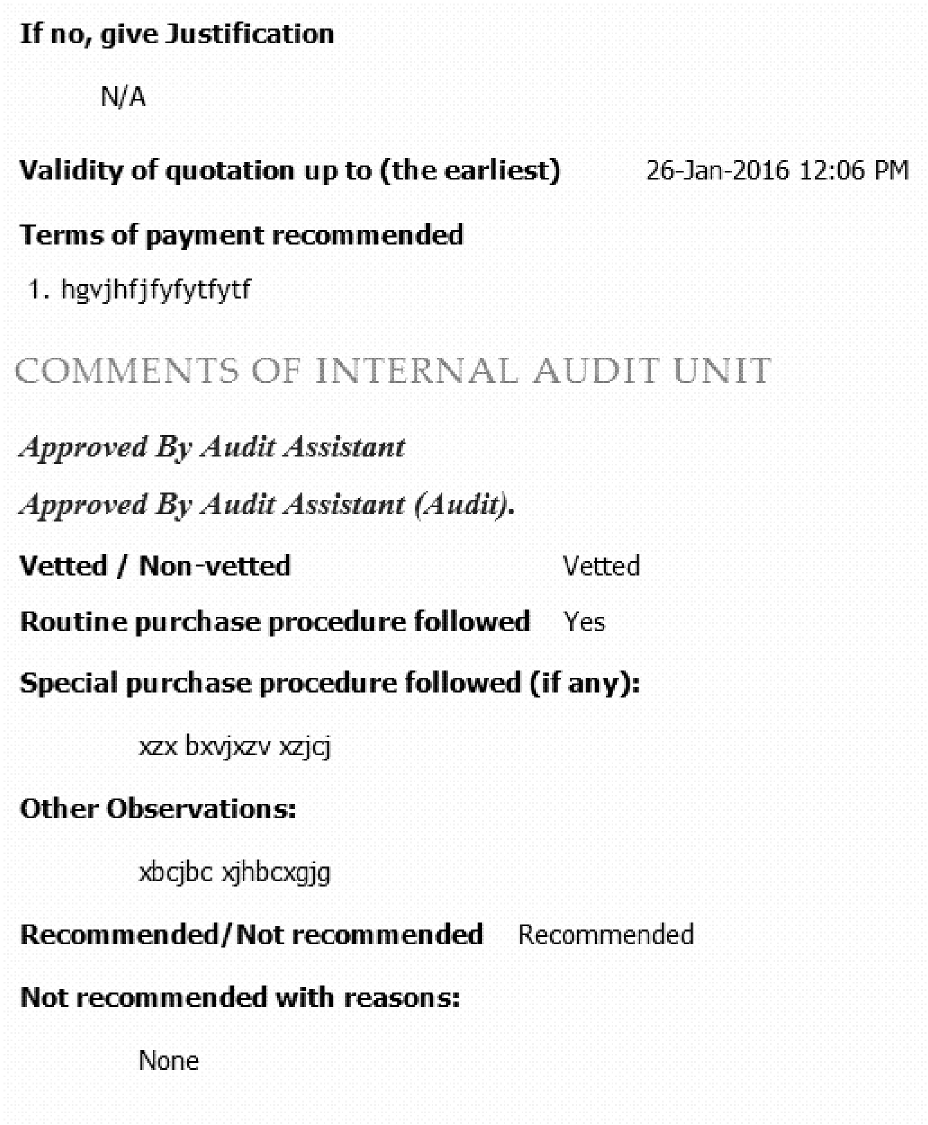


Figure 4.112: The Search Requisition Pop-up

Figure 4.113: Requisition Details Page



If no, give Justification

N/A

Validity of quotation up to (the earliest) 26-Jan-2016 12:06 PM

Terms of payment recommended

1. hgvjhfjfyfytfytf

COMMENTS OF INTERNAL AUDIT UNIT

Approved By Audit Assistant

Approved By Audit Assistant (Audit).

Vetted / Non-vetted Vetted

Routine purchase procedure followed Yes

Special purchase procedure followed (if any):

xzx bxvjxzv xzjcj

Other Observations:

xbcjbc xjhbcxgjg

Recommended/Not recommended Recommended

Not recommended with reasons:

None

Figure 4.114: Requisition Details Page

Figure 4.115: HOD/PI Approval Page

4.2.7.3 HOD-PI Approval

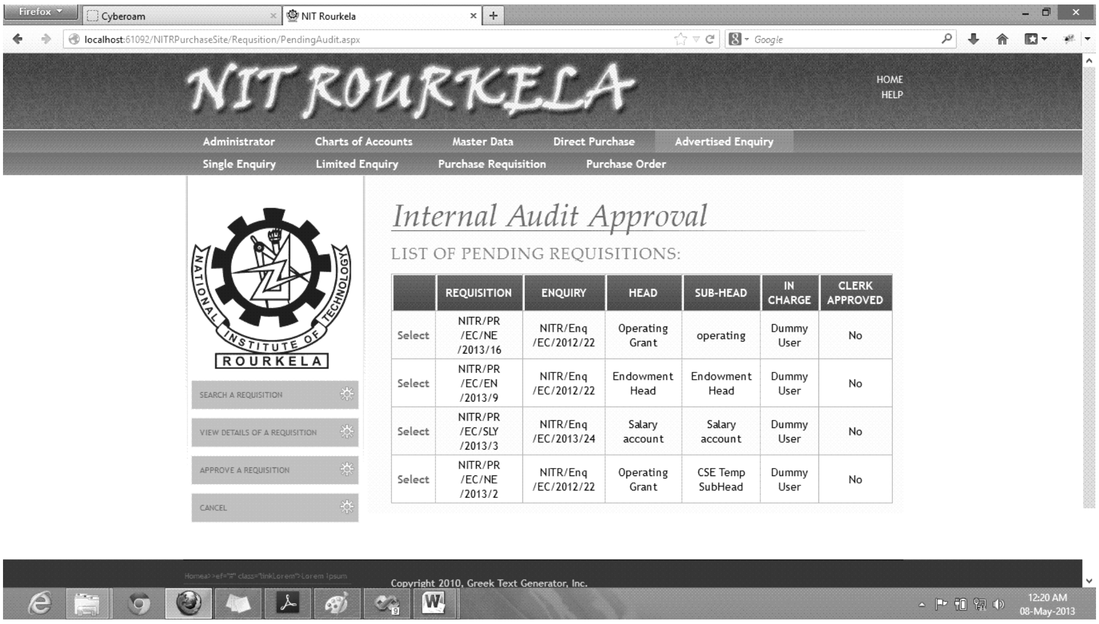
Requisitions pending Approval of HODs or PIs are shown in HOD/PI Approval page. (Fig. 4.115 on page 163).

Use "Search a Requisition" functionality to find and select the appropriate requisition. Then click the "Approve a Requisition" button to go to "Requisition Details" page. Here a new button "Approve as HOD/PI" will be visible. Click on it to approve.

4.2.7.4 Internal Audit Approval

Requisitions pending Approval of Internal Audit are shown in Internal Audit Approval page. (Fig. 4.116 on page 164).

Use "Search a Requisition" functionality to find and select the appropriate requisition. Then click the "Approve a Requisition" button to go to "Requisition Details" page. Here two new buttons "Approve as Audit Assistant" and "Approve as Assistant Registrar" will be visible.



	REQUISITION	ENQUIRY	HEAD	SUB-HEAD	IN CHARGE	CLERK APPROVED
Select	NITR/PR /EC/NE /2013/16	NITR/Enq /EC/2012/22	Operating Grant	operating	Dummy User	No
Select	NITR/PR /EC/EN /2013/9	NITR/Enq /EC/2012/22	Endowment Head	Endowment Head	Dummy User	No
Select	NITR/PR /EC/SLY /2013/3	NITR/Enq /EC/2013/24	Salary account	Salary account	Dummy User	No
Select	NITR/PR /EC/NE /2013/2	NITR/Enq /EC/2012/22	Operating Grant	CSE Temp SubHead	Dummy User	No

Figure 4.116: Internal Audit Approval Page

On clicking the "Approve as Audit Assistant" button, the system first checks if it is the right user and then opens the Audit Approval pop-up (Fig. 4.117 on page 165).

After filling the form the "Save" button is clicked to save changes.

On clicking the "Approve as Assistant Registrar" button, the system first checks if it is the right user and then approves the requisition.

4.2.7.5 Finance Approval

Requisitions pending Approval of Accounts Section are shown in Finance Approval page. (Fig. 4.118 on page 165).

Use "Search a Requisition" functionality to find and select the appropriate requisition. Then click the "Approve a Requisition" button to go to "Requisition Details" page. Here a new button "Approve as Finance Officer" will be visible.

On clicking the "Approve as Finance Officer" button, the system first checks if it is the right user and then opens the Finance Approval pop-up.

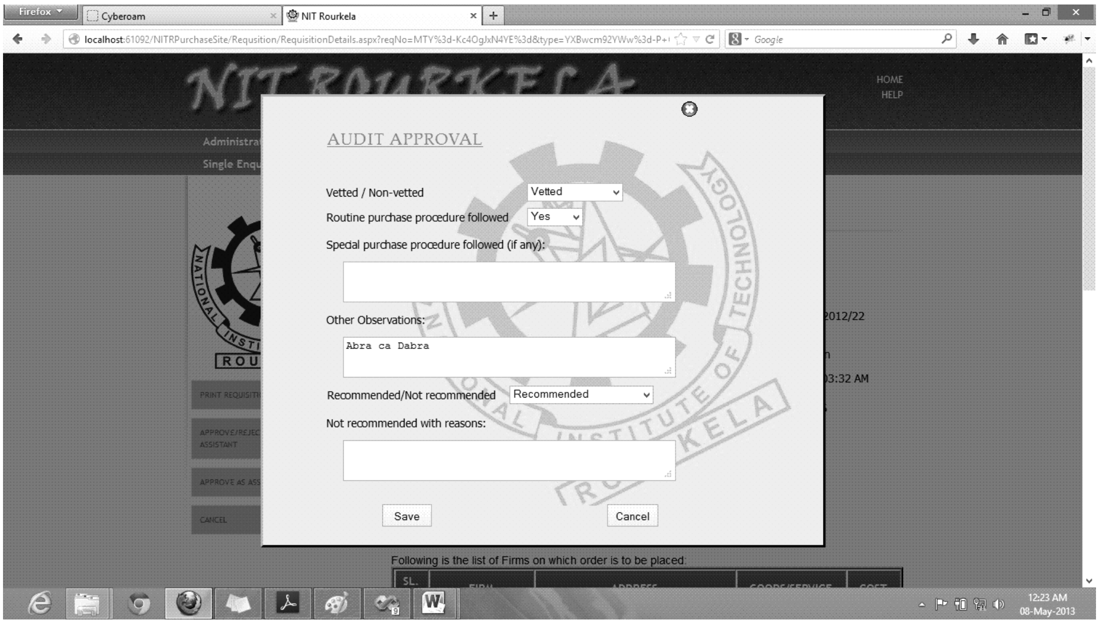


Figure 4.117: Audit Approval pop-up

Figure 4.118: Finance Approval Page

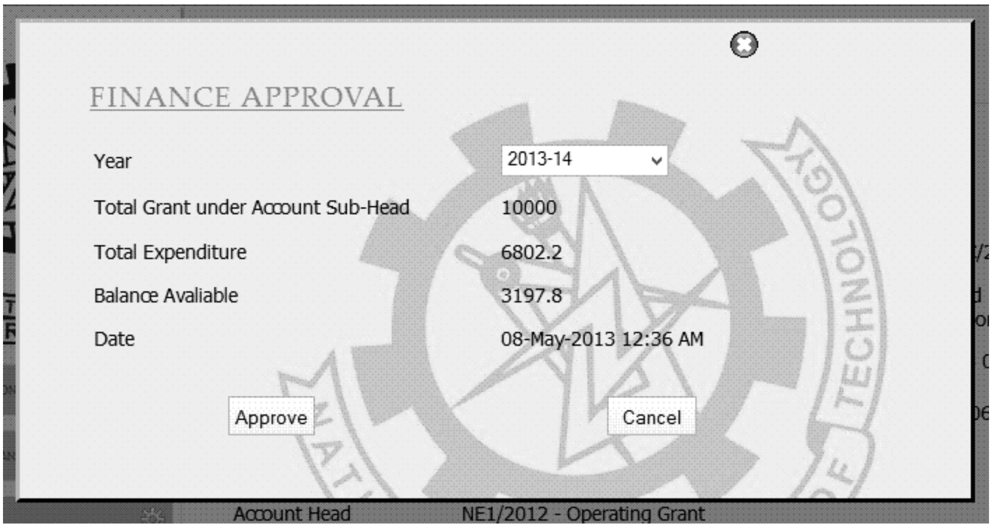


Figure 4.119: Audit Approval pop-up

The "Approve" button is clicked to save changes.

However, the "Approve" button in the pop-up is enabled only when sufficient money is available in the sub-head for selected year. (Fig. 4.119 on page 166)

If the Sanctioning Authority of the Requisition is HOD or PI (i.e. Purchase amount is less than 25,000), the Fund is automatically sanctioned. Otherwise it must be sanctioned by Dean (25,000 to 50,000) or Director (Above 50,000).

4.2.7.6 Fund Sanctioning

Requisitions pending Approval of Sanctioning Authority (Dean or Director) are shown in Fund Sanctioning page. (Fig. 4.120 on page 167).

Use "Search a Requisition" functionality to find and select the appropriate requisition. Then click the "Approve a Requisition" button to go to "Requisition Details" page. Here a new button "Approve as Sanctioning Authority" will be visible.

On clicking the "Approve as Sanctioning Authority" button, the system first checks if it is the right user and then approves the Fund Sanctioning.

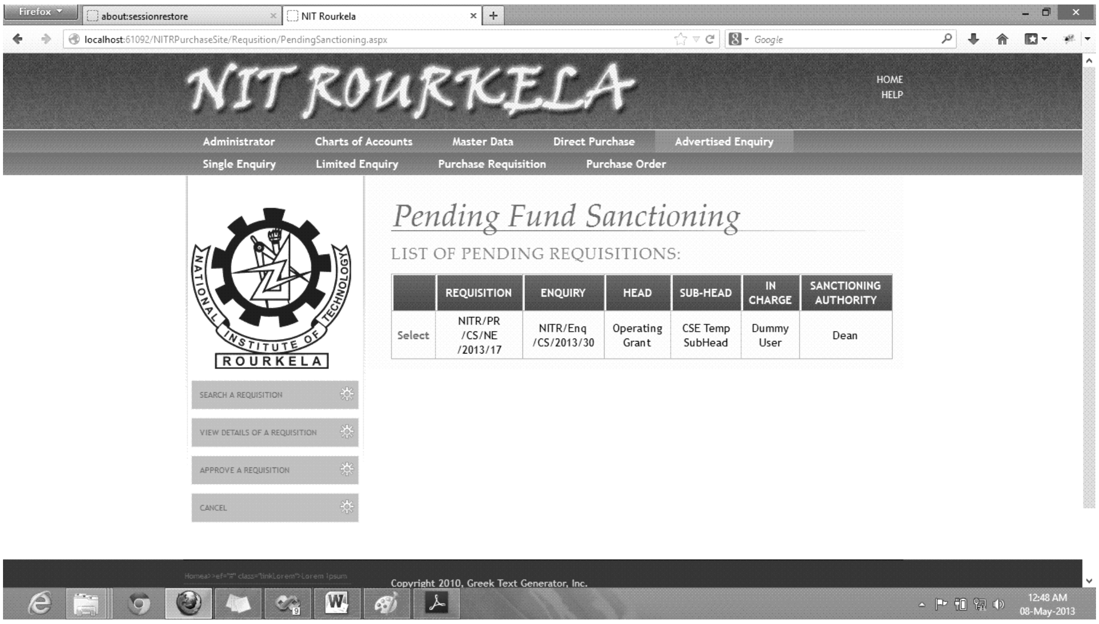


Figure 4.120: Fund Sanctioning page

4.2.7.7 Generate and Print Requisition

On clicking the "Print Requisition Details" button on the Requisition Details page, the system opens up a pop-up for printing Requisition Letter. (Fig. 4.121 on page 168).

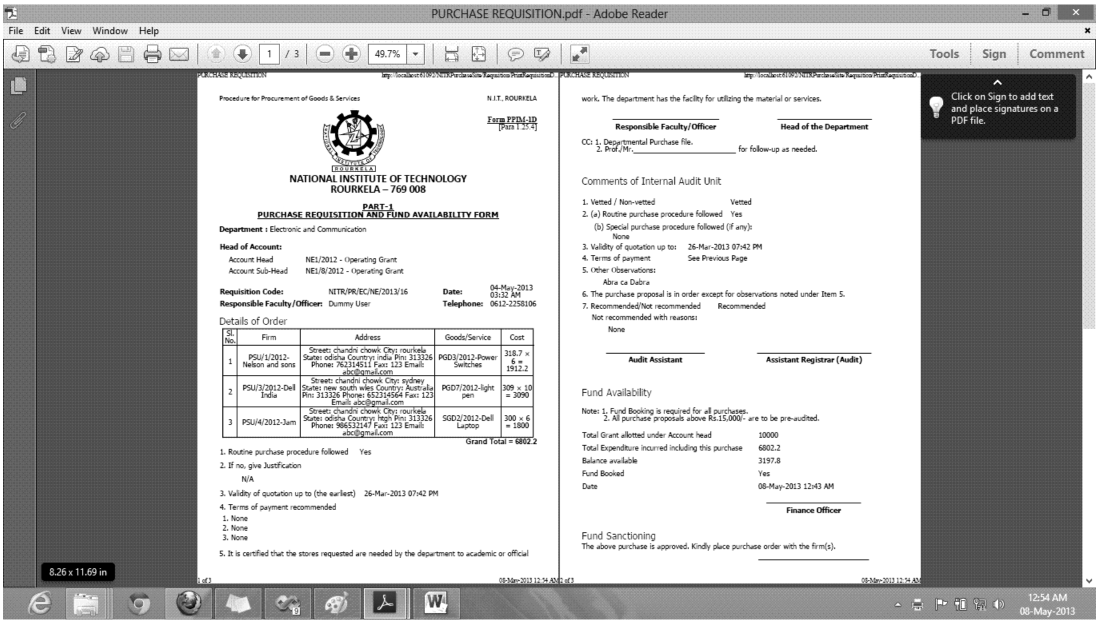


Figure 4.121: Printed Requisition Letter in pdf doc

4.3 Tables and Views

4.3.1 Tables

The following Tables were used in the Database. The columns, data-types and other information are shown with them.

Column Name	Data Type	Information	Allow null
AccountCategoryNumber	bigint	Primary Key	No
AccountCategoryCode	varchar(50)	-	Yes
AccountCategoryName	varchar(100)	-	Yes
AccountCategoryDescription	varchar(100)	-	Yes
Status	varchar(50)	-	Yes
CreatedBy	varchar(100)	-	Yes
CreatedOn	varchar(100)	-	Yes
ModifiedBy	varchar(100)	-	Yes
ModifiedOn	varchar(100)	-	Yes

Table 4.1: AccountCategoryMaster

Column Name	Data Type	Information	Allow null
AccountHeadNumber	bigint	Primary Key	No
AccountHeadCode	varchar(100)	-	Yes
AccountHeadName	varchar(100)	-	Yes
AccountHeadDescription	varchar(100)	-	Yes
AccountCategoryNumber	bigint	Foreign Key	Yes
Status	varchar(50)	-	Yes
CreatedBy	varchar(100)	-	Yes
CreatedOn	varchar(100)	-	Yes
ModifiedBy	varchar(100)	-	Yes
ModifiedOn	varchar(100)	-	Yes

Table 4.2: AccountHeadMaster

Column Name	Data Type	Information	Allow null
AccountSubHeadNumber	bigint	Primary Key	No
AccountSubHeadCode	varchar(100)	-	Yes
AccountSubHeadName	varchar(100)	-	Yes
AccountSubHeadDescription	varchar(100)	-	Yes
AccountHeadNumber	bigint	Foreign Key	Yes
ResponsibleAuthority	bigint	Foreign Key	Yes
Approving Authority	bigint	Foreign Key	Yes
Status	varchar(50)	-	Yes
CreatedBy	varchar(100)	-	Yes
CreatedOn	varchar(100)	-	Yes
ModifiedBy	varchar(100)	-	Yes
ModifiedOn	varchar(100)	-	Yes

Table 4.3: AccountSubHeadMaster

Column Name	Data Type	Information	Allow null
AdvertisedEnquiryItemNumber	bigint	Primary Key	No
EnquiryNumber	bigint	Foreign Key	Yes
ItemTableName	varchar(50)	-	Yes
PrimaryItemNumber	bigint	Foreign Key	Yes
SecondaryItemNumber	bigint	Foreign Key	Yes
Quantity	varchar(20)	-	Yes
Status	varchar(50)	-	Yes
CreatedBy	varchar(100)	-	Yes
CreatedOn	varchar(100)	-	Yes
ModifiedBy	varchar(100)	-	Yes
ModifiedOn	varchar(100)	-	Yes
TechnicalDetails	varchar(100)	-	Yes

Table 4.4: AdvertisedEnquiryItemDetails

Column Name	Data Type	Information	Allow null
AdvertisedEnquirySupplierNumber	bigint	Primary Key	No
EnquiryNumber	bigint	Foreign Key	Yes
ItemTableName	varchar(50)	-	Yes
PrimaryItemNumber	bigint	Foreign Key	Yes
SecondaryItemNumber	bigint	Foreign Key	Yes

Table 4.5: AdvertisedEnquirySupplierDetails Part-1

SupplierTableName	varchar(50)	-	Yes
PrimarySupplierNumber	bigint	Foreign Key	Yes
SecondarySupplierNumber	bigint	Foreign Key	Yes
ResponseStatus	varchar(50)	-	Yes
SupplierResponseDate	varchar(20)	-	Yes
NetPrice	real	-	Yes
EntryTax	real	-	Yes
ExciseDuty	real	-	Yes
VATCST	real	-	Yes
DeliveryCharges	real	-	Yes
OtherCharges	real	-	Yes
Warranty	real	-	Yes
PaymentTerms	varchar(100)	-	Yes
Total Charges	real	-	Yes
TechnicalMarks	real	-	Yes
FinancialMarks	real	-	Yes
TechnicalDesc	varchar(100)	-	Yes
Status	varchar(50)	-	Yes
CreatedBy	varchar(100)	-	Yes
CreatedOn	varchar(100)	-	Yes
ModifiedBy	varchar(100)	-	Yes
ModifiedOn	varchar(100)	-	Yes
TechnicalDetails	varchar(100)	-	Yes

Table 4.6: AdvertisedEnquirySupplierDetails Part-2

Column Name	Data Type	Information	Allow null
DepartmentNumber	bigint	Primary Key	No
DepartmentCode	varchar(50)	-	Yes
DepartmentName	varchar(150)	-	Yes
HOD	bigint	Foreign Key	Yes
ChairmanPurchaseCommittee	bigint	Foreign Key	Yes

Table 4.7: DepartmentMaster

Column Name	Data Type	Information	Allow null
DirectPurchaseDetailsNumber	bigint	Primary Key	No
DirectPurchaseNumber	bigint	Foreign Key	Yes
ItemNumber	bigint	Foreign Key	Yes
ItemType	varchar(50)	-	Yes
SupplierNumber	bigint	Foreign Key	Yes
SupplierType	varchar(50)	-	Yes
QuantityOrdered	int	-	Yes
BillNumber	varchar(50)	-	Yes
UnitPrice	real	-	Yes
Status	varchar(50)	-	Yes
CreatedBy	varchar(100)	-	Yes
CreatedOn	varchar(100)	-	Yes
ModifiedBy	varchar(100)	-	Yes
ModifiedOn	varchar(100)	-	Yes
BillDate	varchar(100)	-	Yes

Table 4.8: DirectPurchaseDetails

Column Name	Data Type	Information	Allow null
DirectPurchaseNumber	bigint	Primary Key	No
DirectPurchaseCode	varchar(100)	-	Yes
PersonInCharge	bigint	Foreign Key	Yes
DirectPurchaseType	varchar(50)	-	Yes
Reason	varchar(500)	-	Yes
SubHeadNumber	bigint	Foreign Key	Yes
ProposedAmount	real	-	Yes
AdvanceTaken	real	-	Yes
DirectPurchaseStatus	varchar(100)	-	Yes
Status	varchar(50)	-	Yes
CreatedBy	varchar(100)	-	Yes
CreatedOn	varchar(100)	-	Yes
ModifiedBy	varchar(100)	-	Yes
ModifiedOn	varchar(100)	-	Yes

Table 4.9: DirectPurchaseMaster

Column Name	Data Type	Information	Allow null
EnquiryNumber	bigint	Primary Key	No
EnquiryCode	varchar(50)	-	Yes
EnquiryType	varchar(50)	-	Yes
DepartmentProject Indicator	varchar(50)	-	Yes
DepartmentNumber	bigint	Foreign Key	Yes
ProjectNumber	bigint	Foreign Key	Yes
EnquiryStatus	varchar(50)	-	Yes
DateCreated	varchar(50)	-	Yes
PersonInCharge	bigint	Foreign Key	Yes
QuotationFormat	varchar(50)	-	Yes
QuotationValidity	real	-	Yes
MinWarranty	real	-	Yes
BidSecurity	real	-	Yes
PerformanceSecurity	real	-	Yes
QuotationReceiveAddress	varchar(300)	-	Yes
FurtherDetailsAddress	varchar(300)	-	Yes
PreBidConferenceDate	varchar(50)	-	Yes
QuotationReceiptDate	varchar(50)	-	Yes
QuotationOpeningDate	varchar(50)	-	Yes
TechnoBidOpeningDate	varchar(50)	-	Yes
FinancialBidOpeningDate	varchar(50)	-‘	Yes
TotalFinancialBidMarks	real	-	Yes
CutOffTechnicalBidMarks	real	-	Yes
Approximate Cost	real	-	Yes

Table 4.10: EnquiryMaster Part-1

Reason1Description	varchar(500)	-	Yes
Reason2Description	varchar(500)	-	Yes
Reason3Description	varchar(500)	-	Yes
Reason4Description	varchar(500)	-	Yes
Reason5Description	varchar(500)	-	Yes
DocumentsEnclosed	varchar(500)	-	Yes
Status	varchar(50)	-	Yes
CreatedBy	varchar(100)	-	Yes
CreatedOn	varchar(100)	-	Yes
ModifiedBy	varchar(100)	-	Yes
ModifiedOn	varchar(100)	-	Yes
TechnicalDetails	varchar(100)	-	Yes

Table 4.11: EnquiryMaster Part-2

Column Name	Data Type	Information	Allow null
FundsDetailsNumber	bigint	Primary Key	No
FundsNumber	bigint	Foreign Key	Yes
AllocatedAmount	real	-	Yes
CommittedAmount	real	-	Yes
SpentAmount	real	-	Yes
DivertedAmount	real	-	Yes
FromSubHead	bigint	Foreign Key	Yes
ToSubHead	bigint	Foreign Key	Yes
TransactionType	varchar(100)	-	Yes
TransactionNumber	bigint	Foreign Key	Yes
Year	varchar(50)	-	Yes
Status	varchar(50)	-	Yes
CreatedBy	varchar(100)	-	Yes
CreatedOn	varchar(100)	-	Yes
ModifiedBy	varchar(100)	-	Yes
ModifiedOn	varchar(100)	-	Yes

Table 4.12: FundsDetailsMaster

Column Name	Data Type	Information	Allow null
FundsNumber	bigint	Primary Key	No
InitialAllocation	real	-	Yes
AllocatedAmount	real	-	Yes
CommittedAmount	real	-	Yes
SpentAmount	real	-	Yes
LeftAmount	real	-	Yes
Year	varchar(50)	-	Yes
AccountSubHeadNumber	bigint	Foreign Key	Yes
Status	varchar(50)	-	Yes
CreatedBy	varchar(100)	-	Yes
CreatedOn	varchar(100)	-	Yes
ModifiedBy	varchar(100)	-	Yes
ModifiedOn	varchar(100)	-	Yes

Table 4.13: FundsMaster

Column Name	Data Type	Information	Allow null
LimitedEnquiryItemNumber	bigint	Primary Key	No
EnquiryNumber	bigint	Foreign Key	Yes
ItemTableName	varchar(50)	-	Yes
PrimaryItemNumber	bigint	Foreign Key	Yes
SecondaryItemNumber	bigint	Foreign Key	Yes
Quantity	varchar(20)	-	Yes
Status	varchar(50)	-	Yes
CreatedBy	varchar(100)	-	Yes
CreatedOn	varchar(100)	-	Yes
ModifiedBy	varchar(100)	-	Yes
ModifiedOn	varchar(100)	-	Yes
TechnicalDetails	varchar(100)	-	Yes

Table 4.14: LimitedEnquiryItemDetails

Column Name	Data Type	Information	Allow null
LimitedEnquirySupplierNumber	bigint	Primary Key	No
EnquiryNumber	bigint	Foreign Key	Yes
ItemTableName	varchar(50)	-	Yes
PrimaryItemNumber	bigint	Foreign Key	Yes
SecondaryItemNumber	bigint	Foreign Key	Yes

Table 4.15: LimitedEnquirySupplierDetails Part-1

SupplierTableName	varchar(50)	-	Yes
PrimarySupplierNumber	bigint	Foreign Key	Yes
SecondarySupplierNumber	bigint	Foreign Key	Yes
ResponseStatus	varchar(50)	-	Yes
SupplierResponseDate	varchar(20)	-	Yes
NetPrice	real	-	Yes
EntryTax	real	-	Yes
ExciseDuty	real	-	Yes
VATCST	real	-	Yes
DeliveryCharges	real	-	Yes
OtherCharges	real	-	Yes
Warranty	real	-	Yes
PaymentTerms	varchar(100)	-	Yes
Total Charges	real	-	Yes
TechnicalMarks	real	-	Yes
FinancialMarks	real	-	Yes
TechnicalDesc	varchar(100)	-	Yes
Status	varchar(50)	-	Yes
CreatedBy	varchar(100)	-	Yes
CreatedOn	varchar(100)	-	Yes
ModifiedBy	varchar(100)	-	Yes
ModifiedOn	varchar(100)	-	Yes

Table 4.16: LimitedEnquirySupplierDetails Part-2

Column Name	Data Type	Information	Allow null
ItemNumber	bigint	Primary Key	No
SupplierNumber	bigint	Foreign Key	No
Relationship	varchar(50)	-	Yes

Table 4.17: PrimaryGoods_PrimarySupplier

Column Name	Data Type	Information	Allow null
ItemNumber	bigint	Primary Key	No
SupplierNumber	bigint	Foreign Key	No
Relationship	varchar(50)	-	Yes

Table 4.18: PrimaryGoods_SecondarySupplier

Column Name	Data Type	Information	Allow null
ItemNumber	bigint	Primary Key	No
ItemName	varchar(100)	-	Yes
ItemCode	varchar(100)	-	Yes
ItemType	varchar(100)	-	Yes
MeasurementUnit	varchar(100)	-	Yes
ExciseDuty	varchar(100)	-	Yes
Status	varchar(50)	-	Yes
CreatedBy	varchar(100)	-	Yes
CreatedOn	varchar(100)	-	Yes
ModifiedBy	varchar(100)	-	Yes
ModifiedOn	varchar(100)	-	Yes

Table 4.19: PrimaryGoodsAndService

Column Name	Data Type	Information	Allow null
SupplierNumber	bigint	Primary Key	No
SupplierCode	varchar(100)	-	Yes
FirmName	varchar(100)	-	Yes
SupplierDescription	varchar(100)	-	Yes
Street	varchar(100)	-	Yes
City	varchar(100)	-	Yes
State	varchar(100)	-	Yes
Country	varchar(100)	-	Yes
PinCode	varchar(50)	-	Yes
ContactPerson	varchar(100)	-	Yes
Designation	varchar(100)	-	Yes
PhoneNumber	varchar(50)	-	Yes
FaxNumber	varchar(50)	-	Yes
Email	varchar(100)	-	Yes
PanNumber	varchar(100)	-	Yes
TinNumber	varchar(100)	-	Yes
MaxOrderSize	varchar(200)	-	Yes
Status	varchar(50)	-	Yes
CreatedBy	varchar(100)	-	Yes
CreatedOn	varchar(100)	-	Yes
ModifiedBy	varchar(100)	-	Yes
ModifiedOn	varchar(100)	-	Yes

Table 4.20: PrimarySupplierMaster

Column Name	Data Type	Information	Allow null
ProjectNumber	bigint	Primary Key	No
ProjectCode	varchar(50)	-	Yes
ProjectName	varchar(100)	-	Yes
PI	bigint	Foreign Key	Yes
DepartmentNumber	bigint	Foreign Key	Yes

Table 4.21: ProjectMaster

Column Name	Data Type	Information	Allow null
ItemNumber	bigint	Primary Key	No
SupplierNumber	bigint	Foreign Key	No
Relationship	varchar(50)	-	Yes

Table 4.22: SecondaryGoods_PrimarySupplier

Column Name	Data Type	Information	Allow null
RequsitionNumber	bigint	Primary Key	No
RequsitionCode	varchar(50)	-	Yes
EnquiryNumber	bigint	Foreign Key	Yes
AccountSubHeadNumber	bigint	Foreign Key	Yes
RequsitionCreatedDate	varchar(500)	-	Yes
RequsitionStatus	varchar(50)	-	Yes
RoutinePurchaseFollowed	varchar(10)	-	Yes
Justification	varchar(200)	-	Yes
HODApprovalFlag	varchar(10)	-	Yes
VettedFlag	varchar(20)	-	Yes
RoutinePurchaseAudit	varchar(10)	-	Yes
SpecialPurchase	varchar(200)	-	Yes
OtherObservations	varchar(200)	-	Yes
Recommendation	varchar(20)	-	Yes
NotRecommendationReasons	varchar(200)	-	Yes
AuditAssistantApproved	varchar(10)	-	Yes
AsstRegistrarAuditApproved	varchar(10)	-	Yes
FinanceDate	varchar(50)	-	Yes
TotalGrantAllocated	real	-	Yes
TotalExpenditure	real	-	Yes
BalanceAvaliable	real	-	Yes
FinanceClerkApproved	varchar(10)	-	Yes
FinanceOfficerApproved	varchar(10)	-	Yes
SanctioningAuthority	varchar(10)	-	Yes
SanctioningAuthorityApproval	varchar(10)	-	Yes
Status	varchar(50)	-	Yes
CreatedBy	varchar(100)	-	Yes
CreatedOn	varchar(100)	-	Yes
ModifiedBy	varchar(100)	-	Yes
ModifiedOn	varchar(100)	-	Yes

Table 4.23: RequsitionMaster

Column Name	Data Type	Information	Allow null
ItemNumber	bigint	Primary Key	No
SupplierNumber	bigint	Foreign Key	No
Relationship	varchar(50)	-	Yes

Table 4.24: SecondaryGoods_SecondarySupplier

Column Name	Data Type	Information	Allow null
ItemNumber	bigint	Primary Key	No
ItemName	varchar(100)	-	Yes
ItemCode	varchar(100)	-	Yes
ItemType	varchar(100)	-	Yes
MeasurementUnit	varchar(100)	-	Yes
ExciseDuty	varchar(100)	-	Yes
Status	varchar(50)	-	Yes
CreatedBy	varchar(100)	-	Yes
CreatedOn	varchar(100)	-	Yes
ModifiedBy	varchar(100)	-	Yes
ModifiedOn	varchar(100)	-	Yes

Table 4.25: SecondaryGoodsAndService

Column Name	Data Type	Information	Allow null
SupplierNumber	bigint	Primary Key	No
SupplierCode	varchar(100)	-	Yes
FirmName	varchar(100)	-	Yes
SupplierDescription	varchar(100)	-	Yes
Street	varchar(100)	-	Yes
City	varchar(100)	-	Yes
State	varchar(100)	-	Yes
Country	varchar(100)	-	Yes
PinCode	varchar(50)	-	Yes
ContactPerson	varchar(100)	-	Yes
Designation	varchar(100)	-	Yes
PhoneNumber	varchar(50)	-	Yes
FaxNumber	varchar(50)	-	Yes
Email	varchar(100)	-	Yes
PanNumber	varchar(100)	-	Yes
TinNumber	varchar(100)	-	Yes
MaxOrderSize	varchar(200)	-	Yes
Status	varchar(50)	-	Yes
CreatedBy	varchar(100)	-	Yes
CreatedOn	varchar(100)	-	Yes
ModifiedBy	varchar(100)	-	Yes
ModifiedOn	varchar(100)	-	Yes

Table 4.26: SecondarySupplierMaster

Column Name	Data Type	Information	Allow null
SingleEnquiryItemNumber	bigint	Primary Key	No
EnquiryNumber	bigint	Foreign Key	Yes
PrimaryItemNumber	bigint	Foreign Key	Yes
SecondaryItemNumber	bigint	Foreign Key	Yes
Quantity	varchar(20)	-	Yes
Status	varchar(50)	-	Yes
CreatedBy	varchar(100)	-	Yes
CreatedOn	varchar(100)	-	Yes
ModifiedBy	varchar(100)	-	Yes
ModifiedOn	varchar(100)	-	Yes

Table 4.27: SingleEnquiryItemDetails

Column Name	Data Type	Information	Allow null
SingleEnquirySupplierNumber	bigint	Primary Key	No
EnquiryNumber	bigint	Foreign Key	Yes
PrimarySupplierNumber	bigint	Foreign Key	Yes
SecondarySupplierNumber	bigint	Foreign Key	Yes
Quantity	varchar(20)	-	Yes
Status	varchar(50)	-	Yes
CreatedBy	varchar(100)	-	Yes
CreatedOn	varchar(100)	-	Yes
ModifiedBy	varchar(100)	-	Yes
ModifiedOn	varchar(100)	-	Yes

Table 4.28: SingleEnquirySupplierDetails

Column Name	Data Type	Information	Allow null
SupplierItemNumber	bigint	Primary Key	No
SupplierNumber	bigint	Foreign Key	Yes
ItemNumber	bigint	Foreign Key	Yes
ItemTableName	varchar(50)	-	Yes
SupplierTableName	varchar(50)	-	Yes
Status	varchar(50)	-	Yes
CreatedBy	varchar(100)	-	Yes
CreatedOn	varchar(100)	-	Yes
ModifiedBy	varchar(100)	-	Yes
ModifiedOn	varchar(100)	-	Yes

Table 4.29: SupplierItemMappingMaster

Column Name	Data Type	Information	Allow null
UserID	bigint	Primary Key	No
UserCode	varchar(50)	-	Yes
UserName	varchar(100)	-	Yes
UserType	varchar(100)	-	Yes
Password	varchar(100)	-	Yes
PhoneNumber	varchar(50)	-	Yes
PANCard	varchar(50)	-	Yes
Email	varchar(50)	-	Yes
SecurityQuestion	varchar(150)	-	Yes
Answer	varchar(50)	-	Yes
Address	varchar(150)	-	Yes
PINCode	varchar(50)	-	Yes
City	varchar(50)	-	Yes
State	varchar(50)	-	Yes

Table 4.30: UserMaster

Column Name	Data Type	Information	Allow null
UserTypeID	bigint	Primary Key	No
UserType	varchar(100)	-	Yes

Table 4.31: UserTypeMaster

4.3.2 Views

The following Views were used in the Database.

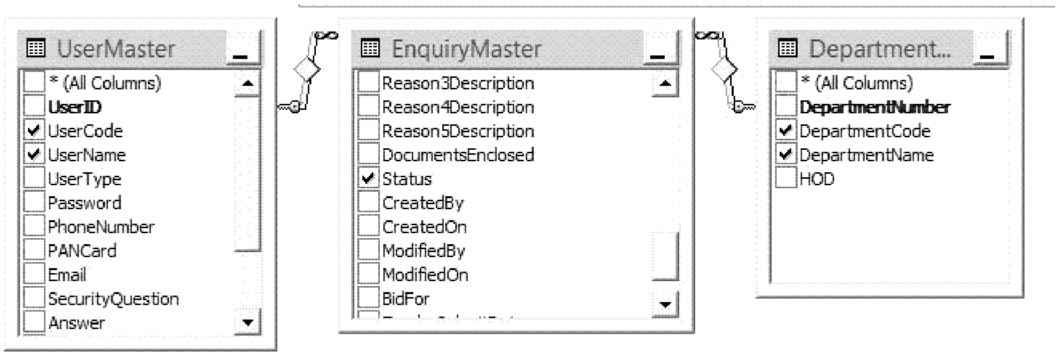


Figure 4.122: AdvertisedEnquiry_User_Department_View

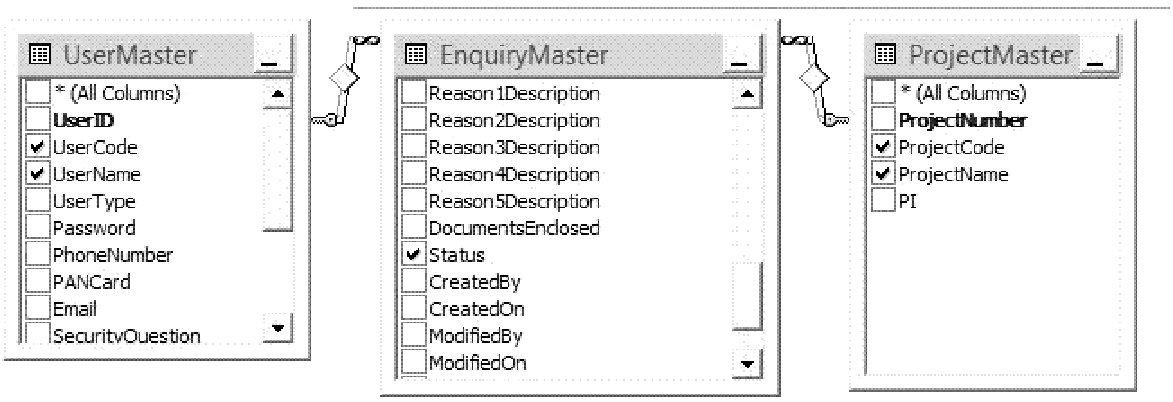


Figure 4.123: AdvertisedEnquiry_User_Project_View

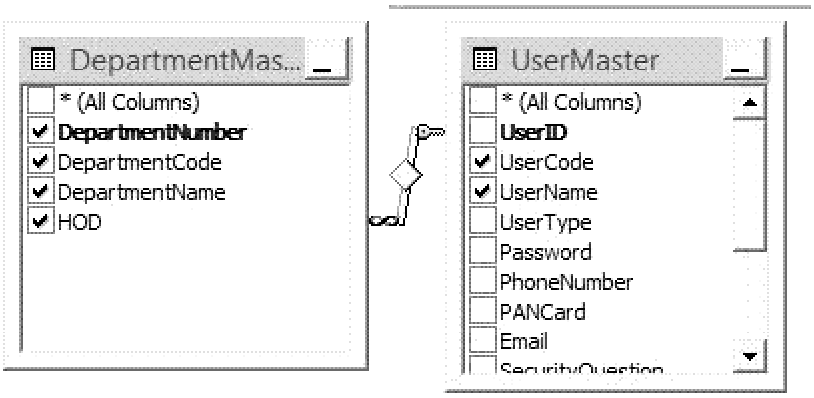


Figure 4.124: Department_User_HOD_ View

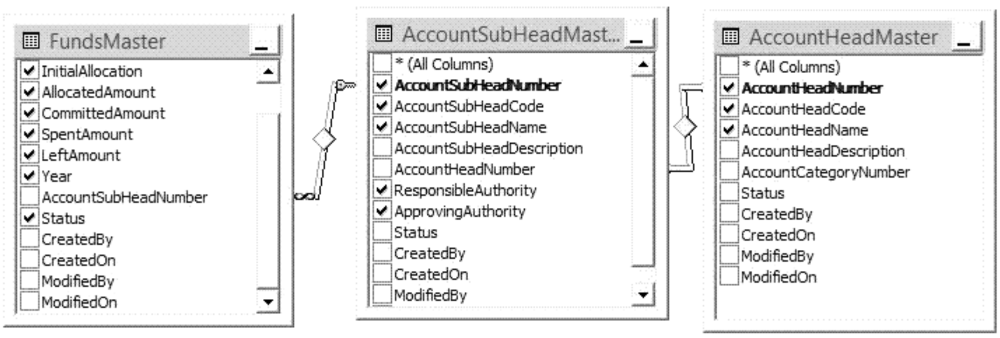


Figure 4.125: Funds_AccSubHead_AccHead_View

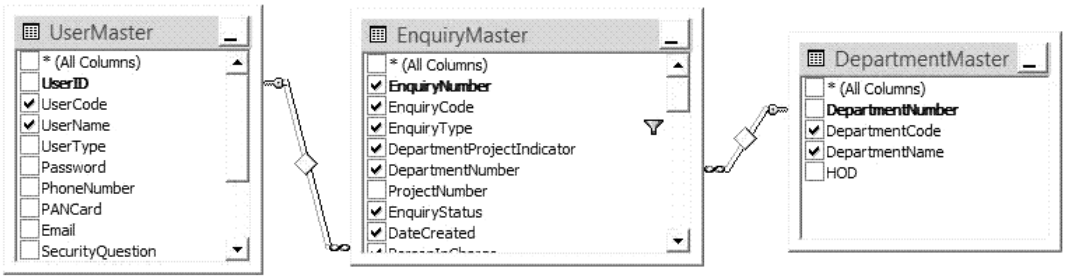


Figure 4.126: LimitedEnquiry_User_Department_View

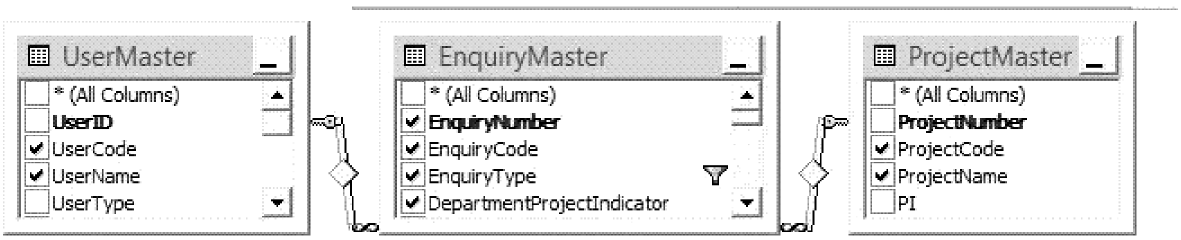


Figure 4.127: LimitedEnquiry_User_Project_View

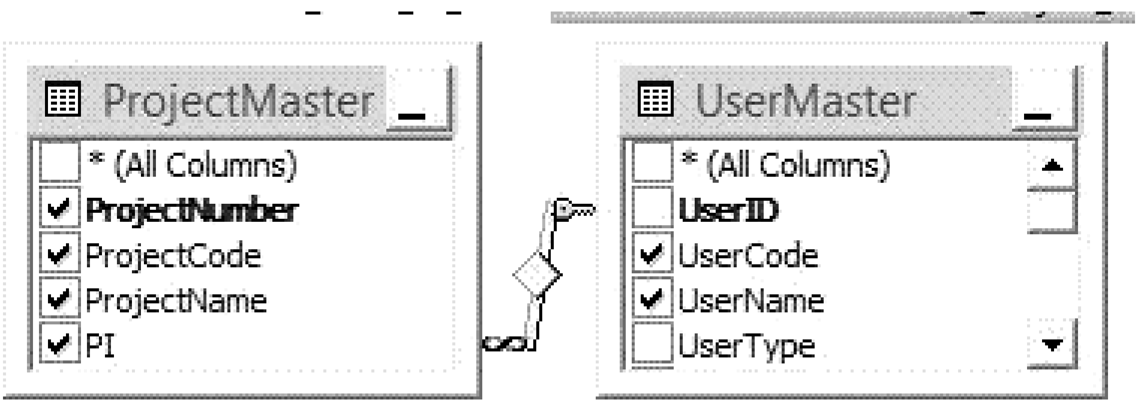


Figure 4.128: Project_User_PI_View

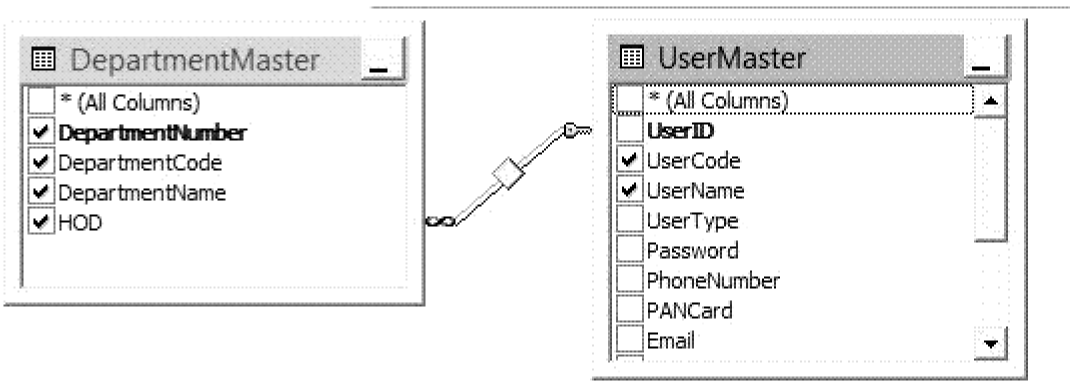


Figure 4.129: Department_User_HOD_View

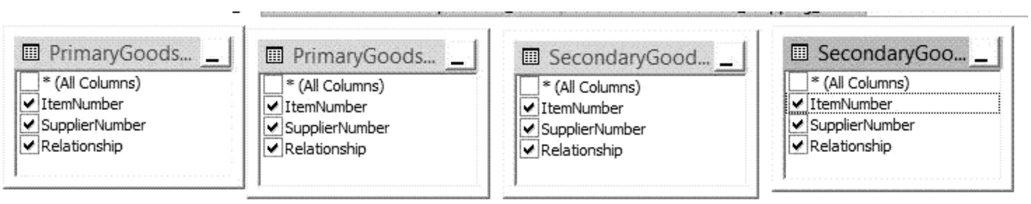


Figure 4.130: ItemSupplierMappingView

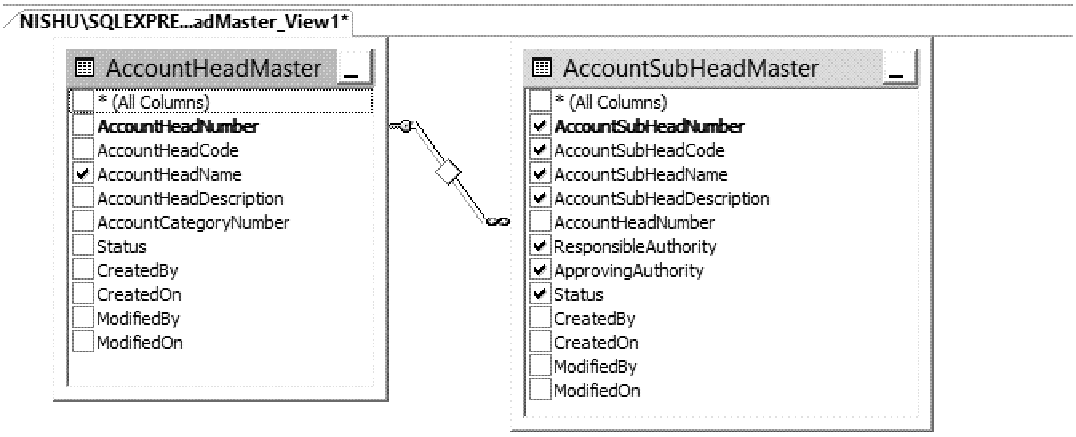


Figure 4.131: AccountHeadMaster_AccountSubHeadMaster_View1

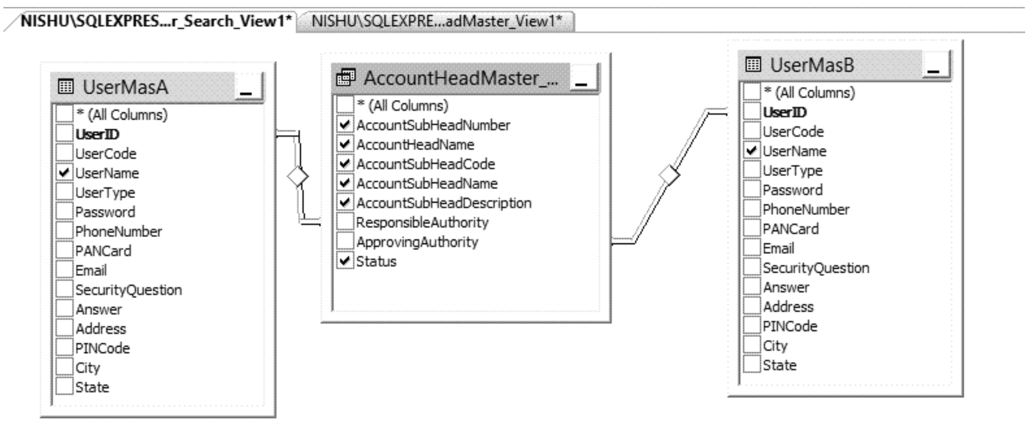


Figure 4.132: AccountSubHeadMaster_Search_View1

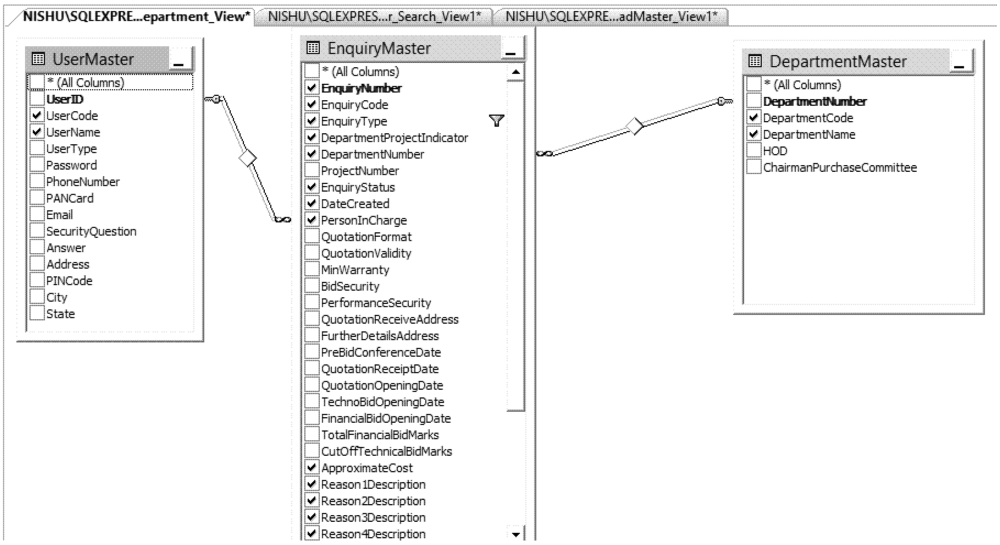


Figure 4.133: SingleEnquiry_User_Department_View_1

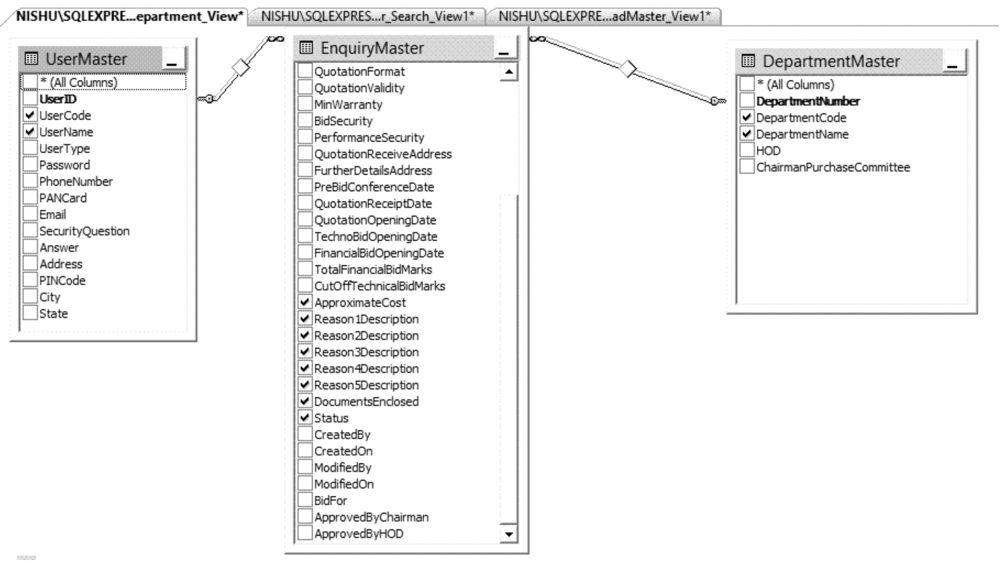


Figure 4.134: SingleEnquiry_User_Department_View_2

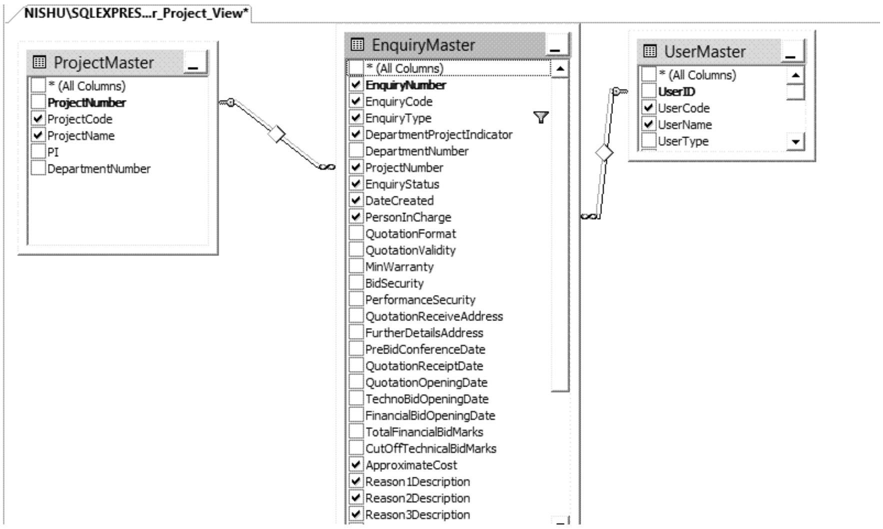


Figure 4.135: SingleEnquiry_User_Project_View_1

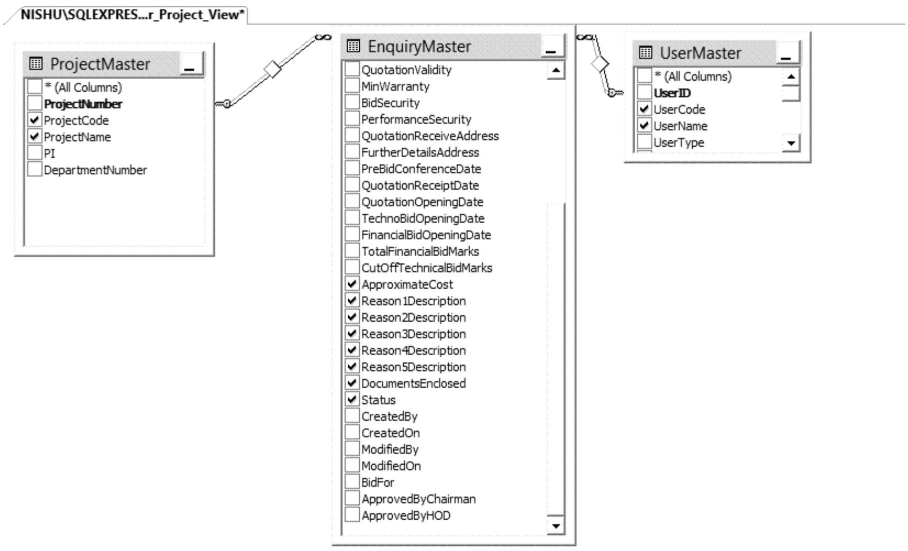


Figure 4.136: SingleEnquiry_User_Project_View_2

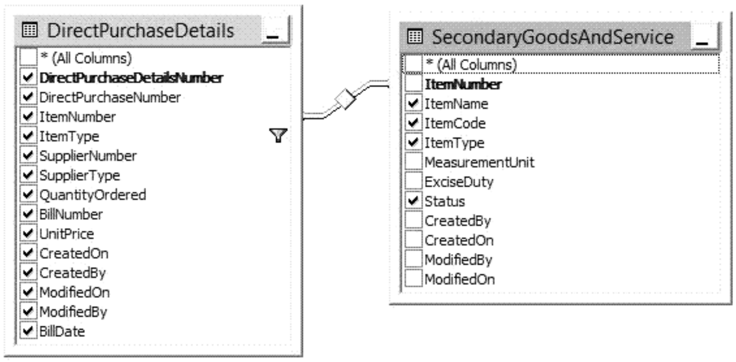


Figure 4.137: DirectPurchaseDetails_GoodsService_View_1

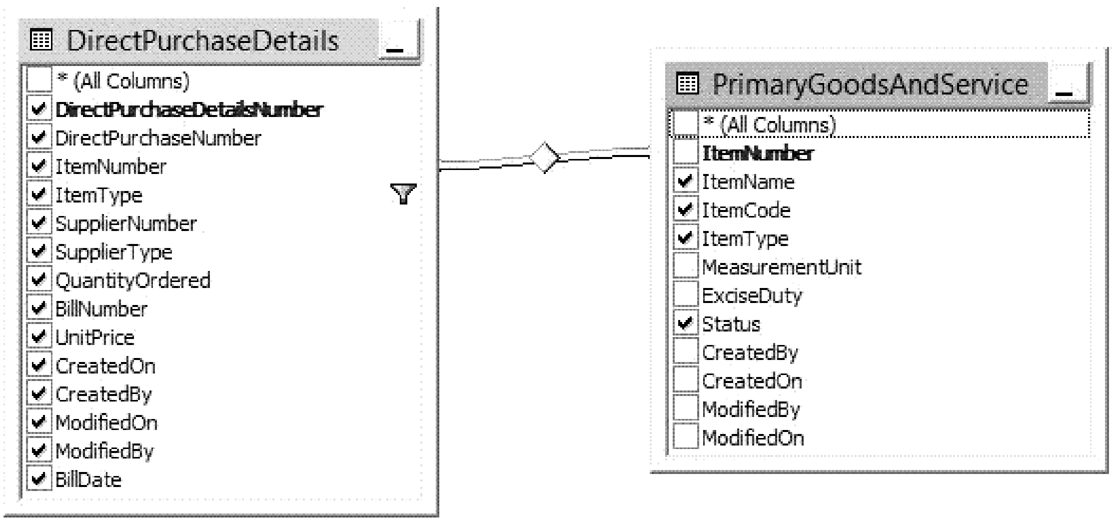


Figure 4.138: DirectPurchaseDetails_GoodsService_View_2

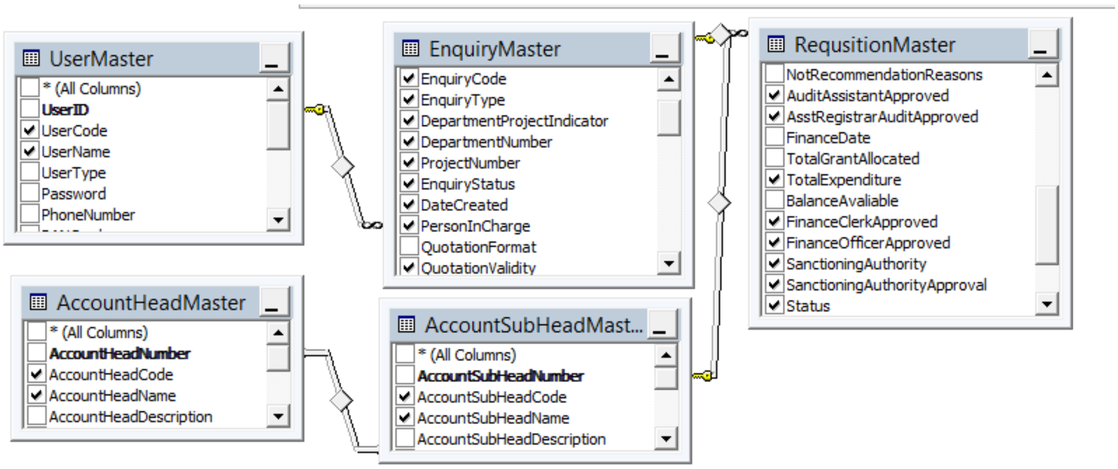


Figure 4.139: Requsition_Details_View

Chapter 5

Conclusion and Future Work

5.1 Conclusion

The development of the Purchase System is complete. The System involves seven different modules:

1. **Manage Login:** Login is the entry gate for the application and manages the session variables associated with the user names.

2. **Manage Chart of Accounts:** Chart of accounts is the heart of the complete application. It consists of the management of account categories, account heads, account sub-heads, fund allocation, goods/services and suppliers.

3. **Manage Direct Purchase:** This module automates the kind of purchase that does not require inviting quotations. Rather these can be done directly. It involves purchase initiation, Goods/Service and Supplier addition, filling bill details and approval by HOD, Finance officer, Internal Audit and Registrar.

4. **Manage Advertised Tender Enquiry:** For the purchase of Goods/Services of estimated value above Rs. 25 lakhs, Advertised Tender Enquiry is used. This module involves initiating Advertised Enquiries, adding Goods/Service and Supplier, finance and technical evaluation, preparing tender letter and

comparative statement and approval by HOD and Chairman of Purchase Committee.

5. **Manage Limited Tender Enquiry:** In such cases, copies of the bidding documents should be sent directly by speed post/registered post/courier/fax/e-mail to selected Registered Suppliers for the goods. This module involves initiating Limited Enquiries, adding Goods/Service and Supplier, finance and technical evaluation, preparing tender letter and comparative statement and approval by HOD and Chairman of Purchase Committee.

6. **Manage Single Tender Enquiry:** It is a process of purchasing Goods and Services. In this process a Good can only be bought from certain supplier only. There are specific reason of doing so, so only one item is bided by a single supplier only. It involves initiating Single Tender Enquiries, adding Goods/Service and Supplier, approval by Assistant Registrar and Director and generating documents.

7. **Manage Requisition:** Purchase requisition has to be initiated after an enquiry. This module involves Requisition initiation, approval by HOD/PI, Internal Audit, Finance officer and Fund Sanctioning.

This system is a big improvement over the manual process that is being followed currently. It reduces workload of faculties and staffs involved, lessens the time delays and ensures transparency. It also reduces the amount of paperwork involved in the process.

The following documents were also created in the process of the development of this project:

- Software Requirements Specifications
- Data Flow Diagrams
- Pseudo Code

5.2 Future Work

The Purchase System developed leaves some scope for future work. A number of new modules and functionalities can be added to the System. One of the modules that can be appended to the System is Managing Purchase Order. This is a small module that will be implemented after Requisition.

The System can also include the Committee Purchase module. If the cost incurred in the purchase of Goods and Services is from Rs.15,000 to Rs.1,00,000, the purchase may be made from the local market on the recommendation of a Purchase Committee constituted for the purpose at Institute level. When it is not possible to write the complete specifications of the product for competitive bidding, this mode of purchase will be followed. The Purchase Committee will survey the local market and obtain quotations to determine the fairness of rate, quality and specifications and identify the appropriate suppliers. The members of the Committee will jointly record a certificate as under on the Comparative Statement and then place Purchase Order.

Some of the functionalities that can be added to already existing modules include promotion from 'PrimaryGoodsService' to 'SecondaryGoodsService' table and Supplier Ratings. The former functionality involves generating lists of most used Goods/Services and moving them from Secondary to Primary table. The latter includes comparing the quality and price of products from different suppliers and thus specifying ratings to them.

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